Issue 49 • Oct 14 • 1989 • 58p

1,000 COMPUTER BARGAINS INSIDE

NEW COMPUTER EXPRESS

BRITAIN'S BIGGEST SELLING COMPUTER WEEKLY

PC

- New French contender
- MCA 2 arrives
- Psion PC hands-on

AMIGA

- Low-cost Music X?
- ProPage 2 out soon
- Dragon's Lair sequel

ST

- Fleet St upgrade
- PC Ditto 2 news
- Light gun soon

ALSO INSIDE

- Columns for PCW, CPC, Spectrum, C64, Archimedes, QL, BBC, MSX

PLUS:

- Computers 'work of devil' claims sect
- Military systems
- Beginning business

EXPOSED: THE VIRUS MYTHS

- Truth about Friday 13th viruses revealed
- Media hype punctured

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WORLD FIRST

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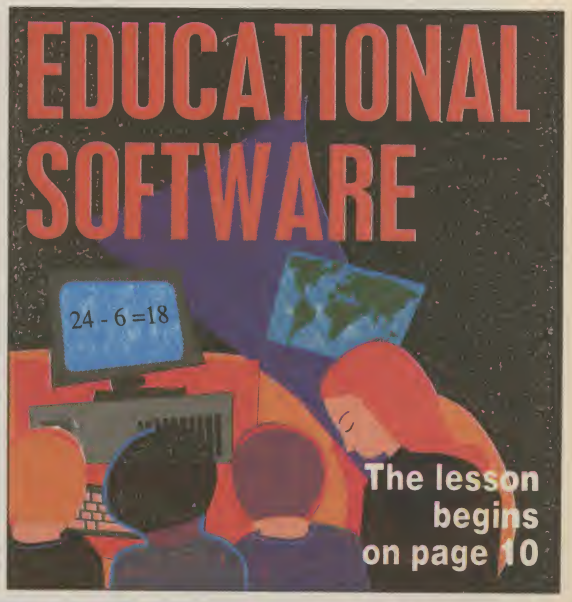
EDUCATIONAL SOFTWARE



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THIS WEEK'S BUYERS' GUIDE TO THE BEST MODEMS, PORTABLES AND PRINTERS

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• Computer crash panic is 'rubbish'

DATACRIME VIRUS MYTH EXPLODED

Reports that Britain's computer users are facing their worst ever attack from a computer virus this Friday are completely unfounded, according to leading virus fighting groups.

As revealed in *Express* (Issue 40) Datacrime is designed to strike IBM compatible PCs tomorrow (October 13th). It is the most vicious virus yet, and isolated cases have been found in Holland.

But panic-inducing stories currently running in the media are premature. Not one case of the vicious Datacrime virus has been detected in the UK since it was discovered six months ago, despite strenuous attempts to track it down here. Four influential computer organisations – the IBM User Group, the Virus Bulletin Board, the Computer Threat Research Association (COTRA) and the British Computer Virus Research Centre – have all confirmed that they do not know of a single case of Datacrime in the UK.

• The media jump on the virus hype bandwagon: The Daily Star ran a scaremongering article on October 5, while Channel 4 (below) took a more sober approach yesterday

MEDIA HYPE

Last Thursday the *Daily Star* ran a front page lead story entitled 'Britain on the blink'. It claimed that the virus threatens to "black out" the country and went on to state that "millions of computers throughout Europe" are infected. Everything from military data to computer games, it said, could be wiped by the virus.

This has prompted a wave of media interest in Datacrime which is the sexiest virus yet. However, while the excesses of national tabloids is hardly news, various computer publications have continued an irresponsible hype campaign which, some believe, can do nothing but harm.

Virus researcher and head of the IBM PC User Group Dr Alan Solomon commented: "It's absolute rubbish and appallingly over the top. There isn't a single instance of Datacrime in this country that we know of."

Solomon also markets a virus-busting program called the *Anti Virus Toolkit*. He said: "I got hold of Datacrime from Holland and naturally placed a detector on our program. But not one person has said they have found the virus. It would be in my financial interest to say the virus is everywhere but that just isn't true.

"This whole thing has been hyped to the rooftops. I think it's mainly down to the program's nature and its sexy name."

ABSOLUTE RUBBISH

Edward Wilding, editor of *Virus Bulletin* said: "It's absolute rubbish. There have been lots of PCs tested and not one has shown the virus. We've tested computers in academic institutions and even they haven't been infected." Computers in colleges are the most vulnerable because they are used by many different people.

At the British Computer Virus Research Centre boss Joe Hirst explained: "It is an extremely dangerous virus but there is no evidence that it's in the country. The odds are very much against anyone catching it." Hirst had been quoted in the *Star* "exclusive" but said he had explained that the virus is rare.

Mark Gibbs, chairman of COTRA, commented, "Most hardened virus pundits, including myself, are of the opinion that viruses, especially Datacrime, are an extremely rare phenomenon."

• Last night Channel 4 broadcast a programme on computer viruses, The Day of the Technopath.

Datacrime explained

Datacrime is a computer program specifically designed to copy itself from one disk to another and destroy the data of innocent computer owners once it has created enough 'offspring' to carry on spreading.

Like all virus programs it is passed via swapping floppies or spreading through networks. Most viruses are pretty harmless and can be detected and wiped without too much fuss.

Datacrime is written to go into action of October 13th of any year (not necessarily Friday 13th). It performs a low level reformat of cylinder zero of the hard disk taking out partition records, boot sector and file allocation table.

This means that while your personal files are still in the hard disk there is no directory with which to find them. Recovering text files is possible but extremely costly in time and money.

Another nasty sideline is that it doesn't only strike on October 13th. Anyone who catches it between that date and December 31st will also be hit.

But don't worry. Your PC has little chance of catching Datacrime... for the moment at least.

Don't believe the hype

The leading virus authorities expect reports next week of computer crashing because of Datacrime. But they reckon they won't actually be caused by the virus.

Dr Solomon explained: "There are millions of computers in Britain and on any day a certain percentage will go wrong."

Also, strains of the old Jerusalem virus may be triggered off on Friday. That will only wipe programs which are usually backed up on floppy anyway.

EXPRESS YOURSELF

There are viruses in circulation. Of that there's no doubt. Help us to separate the facts from the fiction. If you come across a virus or know of someone who has call the *Express* newsdesk on 0225 446034 or our 24 hour hotline on 0225 444439.

EXCLUSIVE

NINTENDO BUSINESS CONSOLE PLANNED

Successful games console giant Nintendo has announced amazing plans to develop a home business system.

The system will offer millions of games players the chance to tap into on-line financial services offering personal portfolio management, stock market information as well as trading of securities and mutual funds. In effect users will be able to make buying decisions through their games console.

The project is a joint effort between Nintendo and hi-tech financial services firm Fidelity Investments. It should be ready next year.

Nintendo will develop and market a modem and controller for the Nintendo Entertainment System which will become part of the "NES Network". This will not only provide interactive entertainment but also informational products. Fidelity plans to launch a series of cartridges for the system based on home trading.

• *Nintendo: Not just a games machine*

Users will be able to make simple decisions through their Nintendo machine on a multiple choice basis with pop up windows, making home trading as easy as playing a game.

As yet it is not clear how much the add-ons or complete system will cost. Nintendo estimates that there will be 20 million American households with the Nintendo console by the end of this year. The feeling within the company is that this will be another massive Nintendo success.

"This is a critical step toward the evolution of the Nintendo Entertainment System beyond traditional home video play. We see this program as an important development for the NES in the United States," said Nintendo's networks chief Jerry Ruttenbur.

Fidelity is going so far as to call it a significant step in the "electronic delivery of financial information and services" in the home.

Such a development from Nintendo here is unlikely due to the machine small user base in the UK. But the vision of a games console as a business machine is revolutionary.

In Britain the closest such development is the Keyline computer which inventor Chris Curry predicts will reach three million British homes by the middle of the next decade (*Express* 33). That should arrive some time next year.

Pirate brought to book: £12K fine

Business software firm Ashton-Tate and anti-piracy unit FAST were last week toasting each other after a successful legal case was brought against a Reading based pirate.

Cybersoft was ordered to pay £12,000 in costs and fines after pleading guilty to 12 charges under the Trades Descriptions Act. An additional 15 charges against the company's boss, Young Kam Lim, were adjourned sine die. This effectively means they will be dropped if the fines are paid in a specified time.

Kam Lim's operation was cracked open after a complaint to Ashton-Tate. A woman had bought a copy of *dBase III* through Cybersoft's mail order ads and found it to be different from the version she used at work.

As a result of the tip off Cybersoft's premises were raided by the Federation Against software Theft and Berkshire Trading Standards Association.

Some 1,300 different illegally copied disks were found at Cybersoft's premises as well as 700 counterfeit manuals all of which had been imported from the Far East.

Ashton-Tate's UK boss Paul Sloane commented: "We will pursue any such cases that come to our notice and we're extremely relieved that there is now the legal protection to make this possible.

FAST chief Bob Hay was equally jubilant. "It's a good example of how honest folk can blow the whistle on pirates of this kind."

Don't forget, you can help fight piracy by calling the *Express* newsdesk with your tip offs (0225 446034). We'll pass them on to FAST.

IBM:MCA II

IBM has launched version 2 of its up-and-coming MCA standard.

MCA 2 is double the speed of the original (up from 40 megabits per second to 80Mbps). The world's biggest computer manufacturer is still attempting to dampen rival standard EISA (Extended Industry Standard Architecture).

A Compaq system based on that was to have been launched last week but has apparently been delayed for a fortnight. That will run at 33Mbps. Meanwhile, Compaq is reportedly close to launching an A4 sized PC at a top end price of $3,000. According to trade mag *MicroScope* the 286 will boast a 1.44 Mb floppy and will weigh in at six pounds.

Shot through

Amiga and ST owners could should soon be having a blast – thanks to Cheetah's Defender lightgun.

The firm plans to bring out 16-bit versions of the gun early next year. It's currently available for the Spectrum and is bundled with the C64 Light Fantastic games pack.

Games software written specifically for the guns should also be wrapped up with the Defender. Said boss Howard Jacobson: "We've been too busy with the Spectrum version but now we can concentrate on the ST and Amiga." They will cost £24.95 each.

PC owners won't get a look in though. Cheetah thinks you're all a bit too mature for guns.

Meanwhile, watch out for a "completely different" innovation from Cheetah over the next few months. Smart money is being put on a controller based on infra red technology. Cheetah picked up a mysterious patent on such a product last year.

COMPUTERS ARE "DEVIL'S TOOL"

• Brethren call for school changes

Members of a religious sect are calling for their children to be made exempt from using computers at school because they believe them to be "the handtool of the devil".

The Christian Exclusive Brethren have begun a letter writing campaign to schools stating that their religious convictions cannot allow their children to be instructed in the use of computers. They say computers are a "scientific imitation which rivals what God has put into living persons making man increasingly independent of God."

The sect point out extractions from the Book of Revelations and predict that the Antichrist will use computers and high technology when (as the Book predicts) he leads the forces of evil.

An interview is being sought with the Secretary of State for Education John McGregor. If granted they will demand that their children be made exempt from lessons in any subject which involve computers. The only subject which parents can withdraw their children from on religious grounds at present is Religious Education.

The issue has reached crisis point in the London borough of Barnet where the council has backed their appeal. John Tiplady of Barnet's education committee said: "I have every sympathy with the dilemma facing the Brethren." However, it is unlikely that the Government will make any changes to the curriculum. It is committed to computerised education.

More than a hundred Brethren children are taught in the Barnet area. Their parents want the 1988 Education Reform Act to be amended so that it includes Christian conscience.

One letter to a Barnet school said: "Through God's mercy and grace we have come to the deep conviction that the tremendous build up of computers and communications will give the man of sin, energised by the full power of Satan, totalitarian control over the whole Western world."

COMMENT

WHERE THERE'S LIFE, THERE'S HYPE: THE VIRUS SCANDAL

There has been much more publicity about the next 'Friday the 13th' type virus, due out this Friday, than about any before.

The last Friday the 13th virus struck in January, when perhaps at most a dozen computer systems were affected – hardly a large-scale event. But there has been more attention in the dailies, on radio and on television this time. It is merely the result of 'popularisation' of the virus concept as mainstream media journos latch on to what computer users have known about for months.

The popular scaremongering about viruses – i.e. the packaging of the news story so as to appeal to the non-computer owner – does no-one any good. Those with computer systems to look after will mostly be well prepared for the events of Friday morning, and it is unlikely that the number of data losses will be much higher than last January.

But stories about this supposed instability, unpredictability and proneness to sabotage create a highly damaging image in the public mind of 'computers' – under which heading will be lumped everything from micros to mainframes to bank dispensers.

There's no excuse – all journos work with computers now and know what they are. To produce wildly exaggerated stories such as the one in The Star is at best mischief-making and at worst cynical distortion of the truth.

SAFE ALLIES

There is a sect of the Plymouth Brethren which wants its children to be able to opt out of any lessons involving computers because, they say, computers are 'a scientific imitation which rivals what God has put into living persons.'

The only computer system currently envisageable that could possibly begin to 'rival' the human brain would be one based on neural networks and, as reported many times in *Express*, the Government refuses to fund potentially trail-blazing British research in that area.

The Plymouth Brethren members can sleep safe in their beds. The Government is well on their side. ●

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• New name in low cost computing

BULL CHARGES IN

French computer manufacturer Bull propelled itself to the forefront of low cost computing last week with the acquisition of Zenith's computer arm.

Bull, which has had a troubled year, has suddenly become the seventh largest manufacturer of computers in the world. The move is clearly designed to get away from top end computing – an area which is feeling the squeeze from the increasing power/price performance of personal computers.

The arrival of Zenith inside the Bull fold gives it an impressive line up of hardware from low cost desktop PCs to state of the art laptops and mini computers.

• *MiniSport: Thin end of the wedge*

It is estimated that the deal will cost Bull some $635 million although that could fall over the next few months as Zenith reduces its stocks.

Bull chairman Francis Lorentz said that he wanted to take the firm into the lower end of the computer market here and in the US. Micro computers are an essential element in our long term strategy," he said. "Zenith will move us into the first tier of the computer industry. We make a perfect fit."

Industry watchers expect the deal to be completed by Christmas with exciting new product announcements some time afterwards.

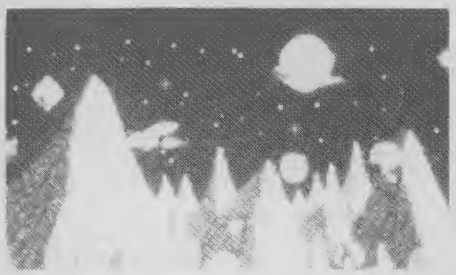
Zenith's latest machine in its quest to rule the massive laptop sector is the £1,300 slimline MiniSport.■

Starray shoots through

***StarRay*, one of the most successful shoot –'em– ups of 1988, has been given a new lease of life over a year on.**

Logotron has taken it upon itself to convert the game to the new Konix Multisystem, taking full advantage of the graphics capabilities and high definition sound to try and improve on the game's already impressive success. When it was frst released it wowed gamers with smooth parallax sideways scrolling.

Logotron's Jane Smith said: "There are only two or three games around for the Konix at the moment,



• *Starray: Konix rebirth*

and *StarRay* should be finished by the time the system is ready."

Meanwhile, on the other side of the Atlantic, Epyx is to take advantage of the similarities between *StarRay* and coin op classic *Defender*.

The US version will be released as part of a licensing deal from Williams, under the title *Revenge of Defender*, but is unlikely to be converted to a coin op because of the presence of Williams' *Stargate*.■

UK DTP show: turnout low

A low turnout hit the Annual DTP Show, held at the London Arena last week. Although the total number of exhibitors was well up on last year, major exhibitors stayed away – and so did most of the punters.

Apple, IBM, Aldus and Computing Unlimited were some of the companies who stayed away, denying punters a chance to see the new Apple laptop, Apple CI, and software such as *PageMaker* and Quark *XPress*.

One reason put forward for the low attendances was bad siting – the Arena is in the Docklands area and more difficult to get to than traditional sites. But some exhibitors were left wondering if the heyday of DTP is over.

This is the second time in three years the show has suffered poor attendances. In 1987 it was hit by the Great Storm on the first day, which threw London's transport systems into chaos and kept punters away.■

SNIPPETS

● ***Even if some viruses aren't the menace you might think it's still worth getting hold of The Complete Computer Virus Handbook out this week. it lists 74 known viruses and advises on how to deal with them. Also, 39 virus bashing packages are evaluated. It costs £14.96. More from publisher Price Waterhouse on 01 378 7200...***

● ***Doctors are soon to be granted the right to tap into the Government's data network which carries details of health records and information concerning various drugs...***

● ***Wall Street's money men were worried last week. IBM warned it might not make as much money as expected. But income is still expected to be more than last year's $37.3 billion.***

● ***A study by the University of Toronto claims that miscarriages are not caused by VDU radiation. The experiments were conducted on 800 mice.***

Handsome prints

Want to get the most out of that expensive laser printer? Then it might be worth having a look at Fontware's new *Imageware* package.

It offers users a special font collection in a variety of typefaces as well as a printer driver which will allow these to operate transparently when printing IBM *DisplayWrite* documents. Fontware claims this will greatly improve the quality of your printed documentation.

But it's probably for the fussier users amongst you – it costs £495. More on 0392 822857.■

• *Imageware: More fonts*

I think therefore I'm not a computer

Computers can never emulate the human mind, according to a new book on artificial intelligence.

The "proof" involves a lot of complex mathematical and computing theorems – but Dr Roger Penrose of Oxford University concludes that, however powerful computers are made, there will always be some things the human mind can do that machines can't. He believes that the power of 'inspiration' is impossible for a silicon chip.

His book, 'The Emperor's New Mind', is published by Oxford University Press at £20.■

• API loses rights to A4 laptop

PROTOCOL CHANGES HANDS - AND PRICE

In a shock move API Electronics has lost the rights to its innovative A4 sized PC laptop the Protocol.

The machine is now to be sold through Basingstoke based M3 IPC under the name Lapro and with a retail price £200 higher than API's. According to API the Taiwanese manufacturer was offered more money for its creation although the matter is shrouded in some mystery.

API announced the availability of the £699 PC compatible through *Express* last August (Issue 40). The machine had been received well and has proved to be one of the most popular *Express* cover machines. Its innovative design and low price point have clearly appealed to buyers with many orders since its launch.

Indeed, the machine was the first A4 size PC compatible to come into the UK.

• *Protocol: Now the Lapro*

Since August Psion has launched a similar model and Poqet has introduced a smaller (and far more expensive) PC compatible.

"We thought the deal had gone through and were about to start really gearing up," said API's Paul Schenk. "The response had been brilliant. I'm very very disappointed because it was close to being a big success."

API had entered the ever more crowded PC market after some success trading in memory chips. it plans to keep an eye on the situation.

Curiously, M3 IPC says it has never heard of API and knows nothing of the deal. It is to call the machine Lapro with one megabyte of RAM for £899. The Protocol was a 512K machine. M3 IPC can be contacted on 0800 272515.

API says it will send the machines it has left to those who have ordered in time. Those who were too late will receive their money back this week.

Why the chip barons are heading for Europe

Intel, the world's leading manufacturer of computer chips, is to set up a major new factory factory in Eire.

This follows moves by many chip manufacturers from North America and the Far East into Europe. Fujitsu and Texas Instruments have already made it clear that they intend on setting up major manufacturing plants on the continent.

The Intel decision involves an investment of $400 million for the Californian firm and ten years of development. Irish trade and industry officials were last week expressing delight at having secured the biggest ever investment in the country's fast growing electronics industry.

All European countries are looking to woo chip manufacturers who want to set up shop here. New regulations set down by the European Community give trading advantages to companies which manufacture in EC countries.

Chips which go through the expensive wafer fabrication process here are defined as locally made and are cheaper to hardware manufacturers than those made outside Europe. They are therefore more attractive to big European chip buyers.

Ireland is an extremely popular choice amongst electronics companies. It has an enormous pool of scientific talent, land is cheap and geographic difficulties which put off heavy industry is no object to manufacturers of relatively small products. More than 400 high tech companies have opened plants in the Republic creating an estimated 25,000 jobs.

Sick Micronet "drowned kitten" ad slammed

Bulletin board Micronet is facing up to vociferous complaints from animal lovers following the publication of an advertisement in its magazine Log-On.

The ad shows a cute kitten along with a large slogan: "If you do not renew your subscription we will drown the kitten in the picture." The Advertising Standards Authority have received "a lot" of complaints from angry cat owners.

A spokeswoman for the RSPCA told trade newspaper *Computer Talk*: "It is totally tasteless and absolutely unacceptable. One can only be amazed by the levels to which some people will sink." According to a spokesman for British Telecom (which owns 40 per cent of Micronet) an apology will be printed.

Apple probed

Japan's version of the Monopolies Commission is investigating allegations that Apple Computer Japan and one of its official dealers have been using strong arm tactics to stop 'grey imports'.

The commission is looking into claims that Apple has asked computer repair outfits to refuse faulty machines not imported by Apple itself. And official dealer Canon Sales is alleged to have "pressured" four computer magazines not to take advertising from unofficial importers.

• *Mac: Japanese pressure*

Both companies' offices have been searched by officials, but both deny the allegations.

Apple says it is trying to curb grey importing – the practice of buying a product in another country where it is sold at a lower price and selling it where the retail price is higher. This, of course, undercuts the manufacturer and appointed dealers. The investigation will probably last until the end of this year.

Ace on the whole

Own an ST or an Amiga? Here's another chance to see what your machine can do on the graphics and animation front.

Out soon is a new game with real cartoon like graphics guaranteed to stun even the most cynical computer user. *Space Ace* from Empire has been sourced from Readysoft in the US. Empire claims the stunning visuals are coupled with good gameplay – *Dragon's Lair* was heavily criticised for being little more than an upmarket demo.

It costs £44.95 and should arrive any time now.

• *Space Ace: Cartoon time*

SHOOT FROM THE LIP

"The sinister electronic device threatens to throw our whole defence system and big business into absolute CHAOS. Even kids'. home computer games face being KO'd by the bug."
That *Daily Star* lead last Thursday.

"Through God's mercy and grace we have come to the deep conviction that the tremendous build up of computers and communications will give the man of sin, energised by the full power of Satan, totalitarian control over the whole of the Western world."
Christian sect the Exclusive Brethren

"The only computers in many villages are those owned by teenage boys of the affluent to play their wham-bam games."
Christian Wolmar laments England's reluctance to join the micro revolution and the failure of "telecottages"(*The Independent*)

"In terms of public relations, yes, Steve [Jobs] is the most successful in the industry. But he does it by saying how crummy everyone else is."
Billionaire Bill Gates on old pal and Apple founder Steve Jobs (*Fortune*).

"If you do not renew your subsciption we will drown the kitten in the picture."
Micronet's novel ad campaign in its mag Log On (*Computer Talk*).

Zoo opens

A new games publishing house as been set up here and in the United States made up mainly of ex-MicroProse employees.

Electronic Zoo is headed up by former boss of MicroProse in the UK with some of his pals from the company moving over to help out. Bell is employing programmers in the UK and Baltimore to work on original product. in the meantime he has tied up deal with a US programming team Innerprise.

The first game here will be *Battle Squadron* for the Amiga which is claimed to run at 60 frames per second. It will cost £24.95 with an ST version following later.

Bell said that the firm would be making some bold announcements in the next few weeks.

KONIX CATCH THE FACTS

• PC Show outrage • Bug delays launch • Sell off soon

A bubbling computer trade was last week in full flow as rumour upon rumour concerning Konix swirled around. They ranged from allegations that the firm is about to sink to talk of one of the big fish moving in on its extraordinary games console the Multisystem.

All this was ignored by boisterous boss Wyn Holloway who promised that the machine will surface in the second week in November. The delay, he explained, was due to a bug in the central processing chip.

Apart from the nature of the games industry – and its colourful collection of gossipers – Holloway blamed the firm's poor showing at the recent PC Show to all the rumours.

"It was a complete cock up," he boomed. "The organisers screwed up on the first day. We tried to get our stuff through the door and they said we couldn't because the chair might scrape the legs of visitors. But then they let us in at about 2.00 in the afternoon. Crazy. I was very annoyed."

In the end Konix managed to get some machines running inside its stand and a couple outside. Claimed Holloway: "We were inundated with orders – more than we could produce."

The bug itself involved a mixing of the masks and corresponding registers in the control chip. Although this would have affected programmers more than users Holloway decided to fix it anyway. "After two years of working on this project I don't want to put it out with something wrong," he said.

• Multisystem: Surfacing soon

On suggestions that Konix had been in negotiations with Atari he commented: "We've spoken to a lot of people who recognise the potential of the Multisystem." It is understood that a sell off of a large portion of the company will take place over the next couple of weeks.

Cheap Postscript on the way

High-quality PostScript laser printers could tumble in price after two powerful American companies announced a clone of the industry-standard language.

PostScript is a page description language which allows home computers to produce professional typeset results from laser printers and image setting machines. At present

• Jobs: Critical of PostScript clone

US firm Adobe, publisher of the top-selling Illustrator package, holds the copyright on the language and charges a huge licence fee to laser printer manufacturers who want to use it.

But now MicroSoft and Apple, two of the biggest computing companies in the States, have got together to produce their own clone of the language. MicroSoft will write the language while Apple will provide the printer fonts.

Although the competition will undoubtedly force down prices, it may do so at the price of producing two incompatible systems. The now standard Adobe printer fonts are encrypted and cannot be used with the new clone.

Apple founder, NeXT boss and technical guru Steve Jobs compared the split to "moving the steering wheel from the right to the left". He claimed that the battle was purely a political one, with no technical advantage to be gained.

At present PostScript laser printers cost at least £2,500, compared to £1,000 for non-PostScript laser printers. Adobe stands to lose heavily if the clone takes off as their language has become the standard throughout the industry.

Softek's Discovery

Games from US publisher Discovery are to be sold here through veteran publisher Softek.

Titles such as *Sword of Sodan* and *Hybris* will now come from the Covent Garden based firm along with a string of new titles. Softek says it is coming out of a sleepy year with a line up of big names to complement the Discovery scoop.

Cult comic hero The Punisher is expected soon along with Snoopy and another Garfield affair. More on 01 831 1801.

POP UP PC

Users of WIMP environment microcomputers such as the Apple Macintosh and Atari ST have long been able to select and run applications programs without having to quit their existing operation. Unfortunately for PC owners, this has not been the case, and with the exception of 'pop-up' utility programs, changing applications has usually been a tedious process involving quitting, rebooting and quitting again.

But now Ashton-Tate, the software house responsible for a large range of PC productivity software including business evergreen *dBASE*, has produced *Trading Places*, a neat little utility which allows the PC user to transparently swap *dBASE III* or *dBASE IV* in and out of memory without the need to exit exisiting applications.

With a few simple keystrokes, users can free almost 100 per cent of their valuable RAM memory by taking the *dBASE* application and placing it on disk. *Trading Places* will not affect the operation of other well-known pop-up programs such as Sidekick and the Norton Utilities and is compatible with 15 of the most common application programs including *Lotus 1-2-3*, *Symphony* and *Multimate*.

***Trading Places* will retail at £89 and can be obtained from Ashton-Tate on 01 569**

Christmas is coming...

Santa Claus is coming to home computers. Alternative Software has finally tracked the great man down and is planning to turn him into a computer game.

A game based on the jolly nice man will be appearing just in time for all the annual celebrations costing just £2.99. And, in the spirit of Chrimbo, all proceeds will go to that most noble cause Save The Children.

Sage business deal

Leading British business software publisher Sage has ended its popular Businesswise series and replaced it with the Sterling range.

That consists of six accounting packages – *Bookkeeper* (£99), *Accountant* (£249), *Accountant Plus* (£399), *Financial Controller* (£499), *PayRoll II* (£199) and *Jobcosting* £199). All except the first are available in network as well as single versions.

The Newcastle based firm sold some 100,000 copies of its Businesswise series. More on 091 213 1555.

Age shall not weary them...

If you're an MSX maniac, an Einstein enthusiast or an Atari eight bitter get out the diary.

Once again the Alternative Micro Show is looming with the organisers promising all that's great about computing with (shall we say) ageless machines. The third such event will be held on November 11th at the Bingley Hall Staffordshire Show Centre near Stafford.

All the old classics of computing's golden era will be covered including the Jupiter Ace, Oric, Dragon, Commodore C16, Texas TI, Memotech and Enterprise as well as more mainstream creatures such as the Speccy, QL and C64.

It costs £2.00 to get in (£1.00 for youngsters). Call 0473 602460.

Uncle goes

Industry bosses were last week reeling as news emerged of the departure of Uncle Techtip from the *New Computer Express* pages.

Britain's best loved technical agony uncle announced to a shocked computer industry that his days of unravelling readers problems are coming to an end. Hordes of loyal "techtippers" will no doubt be dismayed to learn that this veritable oracle of information is to move on.

It is understood Uncle Tech Tip will be reappearing at Express' sister publication ST Format. He will be editing the Tech Tips page until a replacement is found.

Fighting back tears the "Uncle" gushed: "I'm sorry to have to leave my techtippers but I'm sure they'll be well catered for by my successor."

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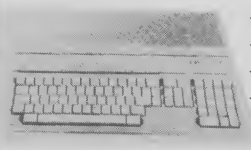

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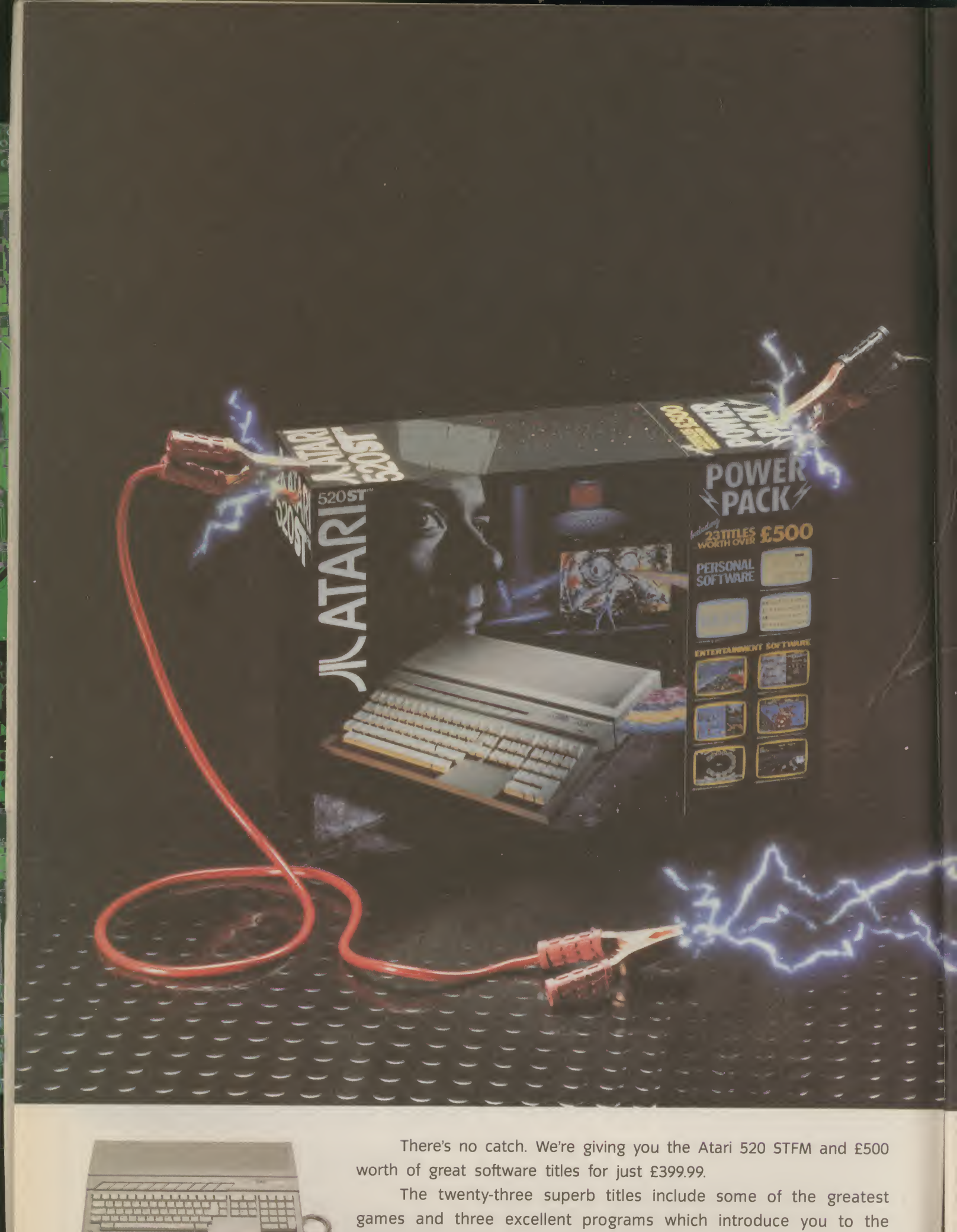

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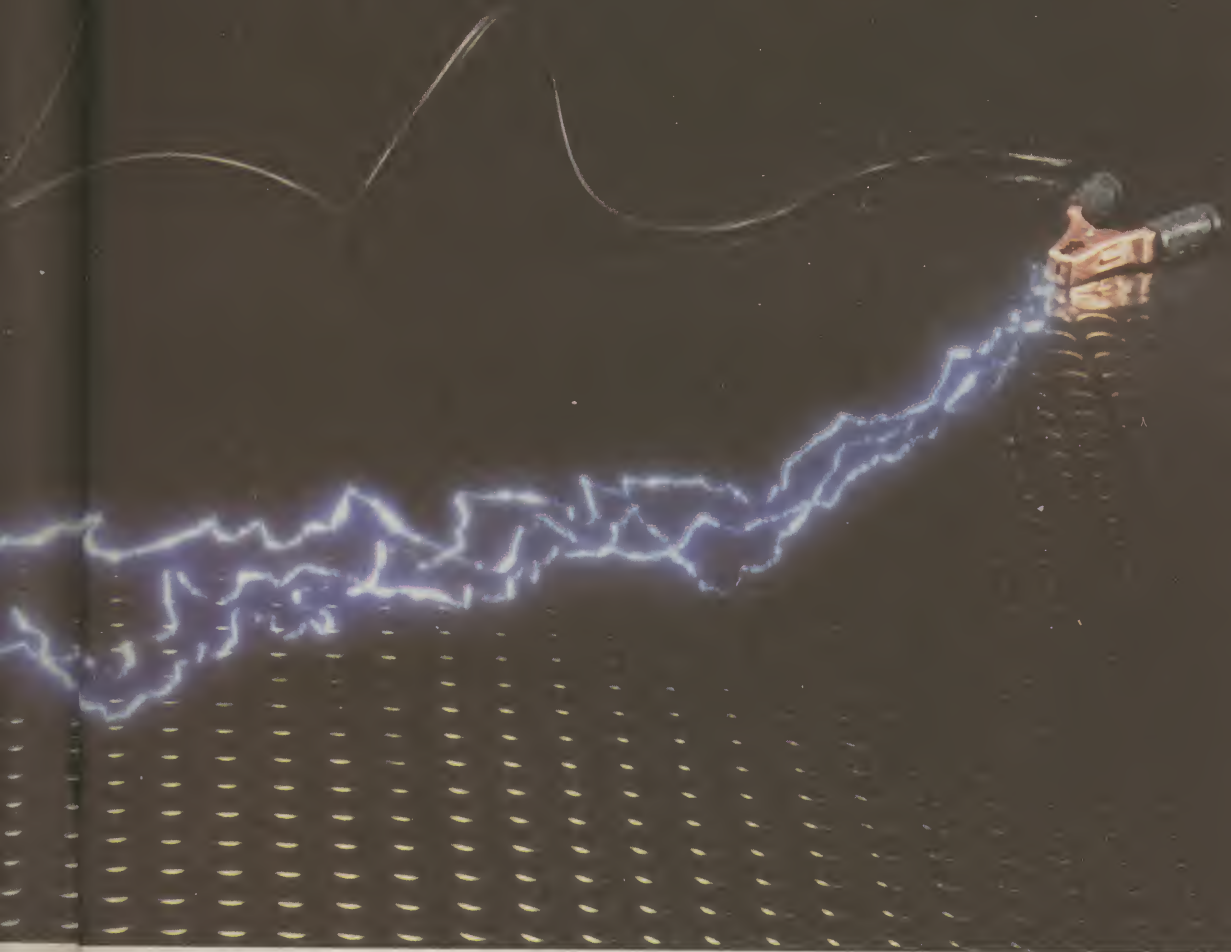

popular computer applications such as word processing and spreadsheets.

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LEARN FROM YOUR MICRO

How can a computer teach your kids? Which is the best machine to buy? Jerry Glenwright scrapes the chalk dust from his finger nails and gives you the answers...

1982 and the beginning of the affordable computer revolution. For the first time ever solid computing power was available to the person in the street. Many theories were expounded at that time for the constructive use of the micro - elaborate home control, personal finance and education. Parents! Have the home micro teach your kids everything. No child need be left behind. Transport your tots to the twenty-first century, technology-wise.

Within a year enthusiastic UK schools had more micros per capita than any education system in the world, so what has happened? Where is all the software and why isn't it readily available?

In fact, there is lots of software - some of it truly excellent, but the educational market keeps a low profile, most teachers buy directly from catalogues and you need to have the right machine. Unless your micro emanates from Acorn you'll have difficulty in obtaining good quality teaching/learning software. Acorn is traditionally the teacher's choice, although of late, the Atari ST is beginning to make a showing.

What you can do

Probably the most obvious, if least sexy, piece of educational software is the typing tutor. These programs get you to touch type interactively, assessing your speed and accuracy and guiding you through from the two-finger stage to copy typing. Keyboard familiarity is a much underrated skill; if you can only enter keyboard data slowly, it's a real handicap to doing anything apart from playing games on your micro. There are plenty of programs for all machines: *Mavis Beacon Teaches Typing* on the PC (Mindscape 0444 86545) *Two Finger Touch Typing* on the PCW (Iansyst 01-607 5844) and so on. For the ST and Amiga there are some in the public domain.

Every school subject is covered – languages, biology, maths, English and so on. They tend to be a straight question-and-answer format and are fine as a backup to normal course work, but you couldn't rely on them to teach you the subject by themselves. There are some adventure games based on mathematical puzzles which are challenging and great fun to play, such as those produced by Topologika on 0733 244862.

Finally there are a few trivia quiz games – fun to play but not to be taken too seriously.

Micro for minors

Which is the best home computer to buy for your spotty youth? What piece of sexy silicon is going to tear them away from the latest episode of The Rough Guide and encourage them to compute their homework? Many manufacturers tout for a slice of the educational market - big profits, much prestige - but only a few will provide the fruit of your loins with a machine capable of teaching them anything.

• ACORN BBC B/MASTER
• £503 • 0223 245200

The traditional big seller is Acorn with its BBC range. Aunty Beeb wanted a computer that would fit the bill with its up and coming series of micro appreciation programs. Several manufacturers Sinclair, Acorn and Oric amongst them vied for the lucrative contract. Acorn upgraded its existing machine the Atom to fit the specification required and was chosen by the BBC, schools flocked to buy a Beeb-backed machine and with all the flocking schools the educational software houses concentrated almost exclusively on the BBC B.

So is this computer the best choice for children? The BBC B has been superseeded by the BBC Master and although it is still a viable computer and one which deserves consideration, there are lots of other machines out there with mountains of good software available at prices and specs rivalling both the Beeb and Master.

• COMMODORE AMIGA
• £400 • 0628 770088

Given the Amiga's superior specification it should be an ideal medium for education software. Lots of colour, great sound and power to manipulate expansive graphics. Unfortunately, those writing teaching packages tend to pass over the Amiga. There is some software available but it's rather thin on the ground. However, Commodore are about to make a push into the educational market with its new A500 pack aimed at teaching. The company has also commisioned a version of of the language Logo.

• ATARI ST
• £299 • 0753 33344

The ST has an inferior specification when compared with the Amiga but, probably due to its initial success in the UK and Europe and its cheaper price, the ST has quite a large quantity of very good educational software available, much of it in the public domain and therefore free. The Atari ST shouldn't be a first choice for educational purposes but is worthy of consideration - it will also help to calm children bellowing for a computer they can also play games on. Its cheap price, colour and sound capabilties and the availability of public domain software aimed at younger children means the ST is a good buy for the pre-teens.

• AMSTRAD CPC
• £200 • 0277 228888

The Amstrad CPC has been largely ignored by schools and colleges which is rather unfortunate because with its built-in cassette, disk drive and bundled monitor, it is a good computer for teaching purposes. Lots of colour and sound helps to sustain the interest of small children and a good keyboard is much appreciated by those with a

modicum of typing skill. As well as conversions from other formats, there are several machine specific programs which exploit the CPC to the full and are fun to use.

• IBM PC AND COMPATIBLES
• From £399 • Any IBM or compatible dealer
Until the breaching of the PC market by a myriad tiny - and those not so tiny such as Amstrad - manufacturers, importers and suppliers of compatibles, the PC was almost exclusively the computing domian of the corporate computer user. Although today the power of the PC is in the hands of the people, the educational software writing scene has been slow to exploit the new market and consequently there is a dearth of good software - in fact *any* software. The PC is a good choice for students who need to learn about computer languages and operating systems or who need to produce dissertations etc., but should be ignored by the pre-teens.

• AMSTRAD PCW
• From £349 • 0277 228888
Like the CPC range, the PCW has been largely ignored by schools and colleges. No sound and a poor display do not an interesting machine make. But the PCW does have some quality teaching software available, there's a public domain version of the language Logo and there's also lots of typing and language tutors. For children and young adults studying O and A levels, the PCW is a useful tool and can help with the production of reports and essays.

• RM NIMBUS
• £1380 • Research Machines 0865 791234
A not-quite-PC-compatible which is popular in schools. RM are Acorn's chief competitor and as such the Nimbus has a lot of software available as well as the ability to run BBC BASIC programs. It is, however, a little overpriced for its specification.

• ACORN ARCHIMEDES
• £744 (A3000) • 0223245200
If money is no object, then this is the slice of silicon wonder which should top the list of anyone looking for an educational computer. The Archimedes is making a big impact in schools and colleges, it can run existing BBC software lightning fast without any additional hardware or software. It can also run IBM PC software with its built-in PC emulator. There's also an increasing amount of teaching software written to exploit the power of the computer. The Arc is a fast, well made machine which is the first choice for young and old.

Emulating ideas

Because the Acorn range of machines - particularly the BBC B - is very popular throughout schools and colleges, many of the other popular home and small business micros offer Beeb emulation in one form or another. This emulation usually takes the form of BBC BASIC, meaning that the host machine can run well-behaved programs written in Beeb BASIC. The IBM PC and its compatibles has an emulator and so does the RM Nimbus and the Commodore Amiga. Commercially programed machine language games software will, on the whole, not run but as the majority of simple teaching programs are written in BASIC, all is well.

Unfortunately, there does not seem to be an emulator for the Atari ST. This is probably due to the fact that it has quite a large range of machine specific teaching programs already available.

Final thoughts

Generally, it has to be said that you can't learn that much about a subject purely from a piece of software; certainly not in the same way that you can from a book. But as a fun way to back up knowledge and skills gained in the evening class or at school, your French tutor or maths software can be well worth the money.●

SIX OF THE BEST

One program or package for each of the popular home computers which takes advantage of the power of the machine, yet provides a friendly and easy-paced environment in which to learn.

• **Arc Master Pack Plus.** In spite of the name of this product, it is in fact intended for use with the Amstrad CPC range of machines. The Arc Master Pack is an incredible collection of 70 programs aimed at junior and primary level kids. There's a parent/child adventure, DR Logo and a multitude of word games all of which use lots of colour, sound and great graphics too capture and sustain the interest of your child. Each module is also available separately for £9 per cassette or £12 per disk. Well presented and with lots of options Arc Master Pack Plus is highly recommended. Contact Arc Education on 0472 812226.

• **PC Accounting.** Educational software for the PC and compatibles tends towards business orientated subjects such as spread sheets, word processing and accounting and this program from SageSoft is no exception. *PC Accounting* will teach you how to automate your accounting and bookkeeping functions using your PC via a series of simple to assimilate lessons teaching the basics of accounting. There are interesting question and answer routines, and a logical sequence of progression which will have you computing the books in hours rather than months. At any stage of the course you can review one or more lessons quickly and easily. Available from Sagesoft on 091 2131555.

• **School Software's Biology.** School Software provide a range of teaching programs for the PCW and *Biology* is one of the best. Simple question and answer routines coupled with an easy pace and review technique take children right through the basics of biology. Each disk costs just £12.95 and there are maths, music, spelling and other programs available too. Contact School Software on 010353 6127994.

• **Fun School 2.** The only program to consistently break into the Gallup top software charts, *Fun School 2* has become a household (or classroom) name. Mixing stunning graphics with lots of colour and sound Database Educational Software has produced a winner. The *Fun School - Over 8s* package features eight programs consisting of an introduction to binary arithmetic, code-breaking. solving anagrams and much more. Also available is *Fun School - Under 6s* and *Fun School - 6-8 year olds*. Contact Database Educational Software on 0625 878888.

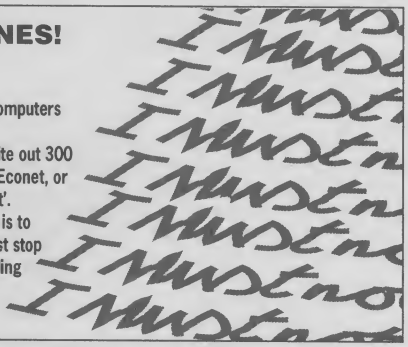
• **Science Topic series.** Available for the Beeb, Master and Archimedes, the Science Topic series from BBC Publications' educational service cover a range of subjects from waves, relationships and bonding, to polymer science, ecology, food and population and electromagnetic theory. The programs are comprehensive and cheap (£7 per disk). Contact Technomatic (or one of the many BBC Educational Software suppliers) on 01 205 9558.

• **Astronomy.** Again produced by the BBC Publications' educational software service, *Astronomy* for primary aged children will have budding Patrick Moores out in the garden gazing - and understanding - the night sky for hours. Contact Technomatic (or any BBC supplier) on 01 205 9558 for a copy of the program (priced £8 per disk).

AND FOR GOOD MEASURE...

• **Commodore Logo.** Recently commisioned by Commodore to bundle with the company's new educational pack, Logo is an excellent teaching instrument for kids who need to learn the concepts behind computers and programming. Available from Commodore on 0628 770088.

YOU, BOY, TAKE A THOUSAND LINES!



• University and poly students are to write out 50 times 'I must buy a computer to word process my essays on'.
• Logo fanatics are to write out 100 times 'I must recognise that Logo is not the language of the future after all'.
• Teachers are to write out 200 times 'I must incorporate computing into my subject as a tool, not as an end itself'.
• Headmasters are to write out 250 times 'I must incorporate computers into the curriculum'.
• School students are to write out 300 times 'I must not hack into Econet, or at least, not to brag about it'.
• The Minister of Education is to write out 1,000 times 'I must stop slashing Government spending on Information Technology teaching in schools'.

LOGO: LANGUAGE OF THE FUTURE (IN 1969)...

There's one obvious way in which the computer can be the ideal educational tool – in the art of programming. Though you shouldn't take the reports of programmers being paid £30,000 too seriously, it's true that programming is a very valuable skill to have, either as part of a job or for your own amusement. So how to start?

Logo, so the reference books tell you, is a computer language specifically designed to teach children programming. It was designed by (among others) Jean Piaget in America in the late 1960s as part of the 'Mathland' project.

The idea is that you have a 'turtle' which you move around by commands. The turtle used to be a turtle-shaped 'robot' which you could move around on the floor by command like FORWARD 20 or RIGHT 30 (the numbers referring to the number of steps to go in that direction). As micros were developed, the 'turtle' often became a shapeless and completely non-reptilian cursor moving around on a computer screen – much to the bemusement of British children who hardly, if ever, see any species of the family *Chelonia* in their back yards.

The language is designed to suit the thinking processes of children more than conventional languages. So, for example, you build up 'primitives' like TO SQUARE which consists of the commands to go forward, turn right, go forward, turn right and so on, making a square. From then on you can just issue the command SQUARE and the turtle traces out a square. You can build up primitives in this way so that a 'program' involving lots of complex movements might end up being a simple collection of primitives.

However, it can't be taken too seriously, and there's hardly anything sensible you can do with it. For small children it may be a fun intro to programming, but BASIC has taken over to a large extent (it is bundled with most micros nowadays and is the language used is schools). If you want to teach a child programming, you have to get to BASIC sooner or later. Logo has been touted as the 'language of the future' for over 20 years; the future still looks a long way off.

If you fancy a nose around the language, there are some versions around in the public domain. For the ST, for example, you can get a copy from the ST Club on 0602 410241 for £2.80. It also comes bundled with the Amstrad PCW in an implementation by Digital Research.

EXPRESS MAIL

Dear Reader

Another collection of comment, controversy, compliments... and Rob Ainsley's replies. Have you got something to say? Make your voice heard in computing's liveliest letters page! Send your contributions to:

Express Mail, 4 Queen Street, Bath, Avon BA1 1EJ

PS. Sorry, but we just don't have the time to give personal replies, whether you include an sae or not. We're too busy putting Express together!

SECRET SERVICE

To comment on the letter 'Tip Off' [in which a programmer reported how he had seen piracy encouraged at a bank he worked for, but was told that as he signed the Official Secrets Act when he started, he couldn't tell anyone].

I should like to point out to the person concerned that they have nothing to fear from the bank or indeed any company that imposes a declaration of secrecy on a contracted workforce and then threatens them with legal action when they discover that a crime has been committed.

The emphasis here is on the word crime, however small. If this person had witnessed a murder, then are the bank suggesting that reporting the fact could lead to that person facing prosecution?

The declaration of secrecy only applies to details of information, such as location of alarm systems, being disclosed which might be used in the perpetration of a robbery or suchlike.

A situation like this is very difficult for both law abiding individuals or firms as once a legal body has been contracted, then no further work will come their way from the accused. A no win situation, if you ignore the moral issue.

Warren Sutherland, Moulton, Northampton

• Thanks for putting the record straight. A supposedly responsible company like a major clearing bank encouraging piracy and trying to hush it up should be exposed. Express sleuths are on the case.

TAMWORTH PIG-OUT

There is an exciting event going on in Tamworth on the 26th November – the Eight-bit Micro Show. It only costs 75p to get in starts 10am and ends at 5pm, and caters for the Spectrum, Amstrad, C64, MSX, Atari XE/XL, C16, X88, SAM Coupé, and Vic 20.

David Wornham will be showing off his impressive *Flexibase 2000*, Kwazy Soft will let people play its games with prizes for high scores. There will be games and hardware for sale for all computers mentioned above, and the Z88 and SAM Coupé will be on show (if it is on sale by then!).

All who come will be entered into a prize draw with the winner getting a sparkling new Atari 65XE. See you there in November.

Adrian Betts, Tamworth, Staffs

• Thanks for the tip, Adrian, but you didn't tell us where in Tamworth it's going to take place! In fact it will be at the Tamworth Arts Centre.

JOKING APART

A few jokes to liven up your other wise boring letters (my Amiga's better than your ST) pages.

Q. What do you get if you cross an Amiga owner with a gorilla?

A. A dumb gorilla.

Q. Why don't Amiga owners eat pickles?

A. Because they can't get their heads in the jar.

Q. Did you hear the one about the Amiga owner who was asked to be a Jehovah's Witness?

A. He refused because he hadn't seen an accident.

Jeff, North Shields, Tyne and Wear

• Q. What do you get if you send bad jokes about Amiga owners to Express?
A. Hospital food

FUTURE SHOCK

Everybody is now into writing saying 'I'm fed up with all your letters saying my computers better than yours'.

Well last night a space ship from the planet Zog landed in my back garden and promised me anything I wanted for a sample of our species. Being smart I gave them a goldfish and told them it would grow.

In return I asked them for the best home computer of the year 2050 and there it was: the Aquarius 20000 portable, with 32 million colours, 640 Mb RAM, instant access infinite storage drive, direct mind link screen, sound and thought controlled.

The only trouble is I've got to wait another 61 years for some software to run on it...

Richard Page, Warrington, Cheshire

...and the dilithium crystals that it runs off currently cost £6 million a pair.

MY COMPANY, RIGHT OR WRONG

Like your correspondent, Mike Spencer (*Express* 47), I'm an Amstrad fan, having trained on a 1512 and being the contented owner of a PCW 8512.

I'm always amused by the ambivalent attitude of the computer press towards the company, accusing it on one page of being only interested in money (isn't every business? Or is *New Computer Express* a registered charity?) and on another praising its enterprise, its knowledge of the home consumer market and its products, through your editorial in the same issue and the complimentary comments on the Amstrad range in your article on the second hand market, 'buying a micro'.

Perhaps this contradictory attitude explains Alan Sugar's hatred of the media!

Neil Foster, Prescot, Merseyside

• Every business has to make money to survive, but there are different ways of doing it. Future Publishing's aim is to 'make a profit by producing good quality magazines at a price the public can afford'; Alan Sugar's express motto is 'At Amstrad, we just want your money'. Yes, it is amusing the ambivalent attitude the press has towards the company, but have you ever tried to get a spare part of out of Amstrad?

CHAIN REACTION

I received one of these 'chain letters' yesterday and I'm sorry to say that names and addresses are being culled from your free advertisement section.

Mike Best, Gloucester

• Thanks for the warning. Unfortunately putting your name and address on anything these days tends to mean you end up on a mailing list; unsolicited chain letters – coming, no doubt, from the people doing these 'make money while you sleep' schemes – are yet another thing we can do without.

JOLLY BAD SHOW

I have just returned from this years PC show at Earls Court – a total waste of £5 (including tube fare) and over two hours of my time.

• This year's show: a disappointment, says DGW Griffith

I arrived at Earls Court at 9.30 am to find an orderly queue to get in. At approximately 9.40am someone with a megaphone appeared and proceeded to herd people around like a demented sheepdog herding sheep, with the result that by the time the doors opened at 10.00am there was no longer a queue but a large disorganised crowd.

In the entrance hall things got very dangerous, there was a massive uncontrolled crush, in which small children and disabled were put at some great risk.

Inside the show, if you did not own a 16 bit machine or a BBC then there was little point in them being there.

I specifically attended this year to see MGT's new computer the SAM Coupé having been assured by MGT that it would be on demonstration there. I even phoned your office last Thursday to confirm MGT would be still be attending and was told that to the best of your knowledge, they would be.

They were not (I don't blame you!). I went to the software stands and Mastertronic's stand to purchase a copy of *Gregory Loses his Clock* a game highly rated in another computer magazine. It was not available anywhere. I then looked around for covers for my two Spectrums – again not available.

I left the show at midday.

I have been to five PCW Shows and noted that for the first time this year the show was divided up into three business days and two public days; perhaps this reflects the lower importance the computer industry now attaches to the general public (without whom, incidentally, many companies would cease to exist!)

Will I be going to the show next year? Yes – subject to the Pope becoming a president and joining the Scottish 'Wee-fee' church!

Disgusted and disappointed

D G W Griffith, London

1,2,3... Disk Copies
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But how much time do you waste and just how frequently do you need to copy files, documents, programs - or even FORMAT new disks? With a SmartCopier it's no longer a chore.

You simply plug in the SmartCopier, insert your disk and request the number of copies.

For small or large copy requirements the SmartCopier is ideal. It *really* is as easy as 1,2,3!

For more information or to arrange a demonstration

AD HOC

I spotted this advertisement (left) in the *Sunday Times* this week and was just wondering if it was legal.

Justin Arthur, Bournemouth

• Yes. The company which produces it weren't sure if it would copy protected disks, though most really serious stuff isn't copy protected. Like a photocopier, it could be used for piracy, but is not intended as such. It only does what your PC does, after all.

• I think the problem is that the show wasn't sure who it was for. The games player looking to try out the latest arcade conversions? The business person looking for a £2,000 networked database? The 'average' home user wanting to see the latest handhelds and pocket PCs? Computing has become such a wide area that it no longer seems sensible to have one show purporting to cover everything. Next year we may see different shows for the different areas of computing; watch the news in Express for developments.

BARGAIN BASEMENT

Just a note of warning for prospective bargain hunters. Recently while in London I bought what I thought was a bargain: Acorn's *View* word processor on ROM for the BBC B in what appeared to be perfectly sealed packaging in a closing down sale.

Unfortunately when I tried the program at home it was found to be defective. After a letter of complaint was returned to me unanswered from the shop, I wrote to Acorn about my problem and asking if they could replace the chip for which I was prepared to meet a reasonable charge.

In an aloof reply they informed me that they did not sell me the chip, and to beware of closing down sales. They could be of no assistance. Seemingly I should be satisfied with at my none functioning bargain, expensive as it is.
B Birkett, Co. Durham

• Well, Acorn have no legal duty to replace the ROM chip, it seems; I'm afraid we can't offer much comfort either...

CONSOLES OUT!

I thought your magazine was about computing; so what's all this tosh about Konix, PC Engines, Segas and Nintendos? I don't see how you relate these toys to computing.

I buy *Express* each week and everyone in the office reads it. Is this equivalent to piracy as they don't buy their own copies?

Despite the criticism the mags pretty good. Great value too at less than 9p per day. I can't even buy a cup of coffee at work for that!
J Barrett, Northampton

• No, it's not equivalent to piracy, just as letting people use your copy of a game on your machine is perfectly OK. We're delighted everyone in the office reads it, so long as they don't sell articles to other computer magazines lifted wholesale from Express. That would be like copying a program and giving it to your friends.

HACKING AWAY

I believe the main reason (as well as the cost of software) for piracy is that many games are much better after they have been 'hacked and packed'. For example, *Outrun* – what a pathetic attempt that was, but when you play the hacked version, wow!

Although its 1 meg memory only its loads in seconds, it has a 60Hz option (faster, bigger graphics) and best of all when you finish a stage it instantly goes to the next one instead of loading it in. With these extra things *Outrun* is a good game and US Gold were lucky it sold on its name.

It just goes to show how selfish some software houses are. For instance you can get hold of *A Personal Nightmare* on double-sided disk instead of single-sided disks! Why software houses can't support the ST double-sided drive now, I don't know. I'm sure single-sided users are few and far between.

Another good thing is that hackers put in high score saves and maybe one day they will put in decent game endings instead of a plain 'Well done'.

So software houses, buck up your ideas! Employ these hackers who make games better and put the prices down.
TG Burnham, Herts

• Employ hackers? Sounds a dodgys move to me. Would you employ the Great Train Robbers on your accounts department?

...SNIPPETS...

...How about some adventure/ RPG coverage?...
Ian Taylor, Wallington, Surrey

Adventures are so involved that a short column wouldn't do them justice, while a long column would, to be honest, just not be cost-effective in terms of extra readers.

...The release of the MGT SAM Coupe will revolutionise the world of 8 bit computers. I for one will queue up to get one...
Michael Butler, Peterborough

Hmm; I'm not convinced that it'll turn the market upside down, but it'll sell steadily and do well.

...Recently you described the QL as 'technical oddity, not worth buying and short on software'. This is completely inaccurate and misleading...
Raymond Fowles, Liverpool

Well, two out of three ain't bad.

OPPORTUNITY KNOCKED

JC Keilaus wanted to know about 'Make money with your micro' in *Express* 46 and you expressed interest in whether or not the scheme frequently advertised in national computer magazines actually work.

Quite frankly, almost every single business opportunity advertised in this way is a complete and utter waste of time. If you want to know what you actually get for your £10, I'll tell you: a cheaply produced 'guide' (often under 10 pages in length), containing information that you already know or could learn from a trip to your library or by asking a friend.

Of course you do get other things, entirely free! For example, your name is added to dozens of mailing lists, allowing you to be offered other gems like 'make millions from your kitchen table', etc.

The main business idea given by these guides is to place national adverts and produce mailshots offering people the chance to make millions from their micros'

The basic idea is not new, only the package it comes in is. These sort of schemes are self-perpetuating *ad infinitum*:

1. 'Make money in your sleep' – i.e. address your envelopes and post them to people, offering 'make money in your sleep'. While you sleep the Royal Mail is winging sacks full of letters to you, containing cheques and postal orders.
2. 'Make money from your typewriter' – i.e. use it to address the envelopes, then go to sleep.
3. 'Make money from your kitchen table' - put your typewriter on the table while you address the envelopes, then go to sleep (again).

Okay, having hopefully saved people like Mr Keilaus from wasting their money, just how can you make money from your micro?

The possibilities are endless (any chance of me writing a feature on this for *Express*?) but the best and simplest methods are:

1. Word Processing. Now a small word processing business can be very cheap to set up. Obtaining work is simple enough too. Students can advertise at college, offering to type up reports, essays etc. Housewives can advertise in shop windows or local newspapers, offering normal WP services and also CV production.

2. DTP and Design. Anyone serious about using DTP in a professional capacity should obtain proper training or at least be able to show the concrete results of their work to prospective customers. As a business, DTP has the same, if not even more, advantages as WP, the major one being that it is more lucrative.

However, I must make the following points very clear:

1. Never start any sort of business venture without checking all of the legal consequences first. If you are unemployed, look at the £5 rule. If you intend to keep names and addresses with your micro, look at the Data Protection Act. Then there's Tax, National Insurance, Trade Descriptions Act, Business Disclosures Act etc. etc.
2. Start small. Business is a gamble. Never risk more than you can afford to lose.
3. Think seriously about all of the aspects of what your scheme will entail: premises, overheads, the market, required turnover etc.
4. Preparation is all. Do as much as possible before you start trading, to make sure you have enough time to actually earn some money, rather than administrating non-profit making activities.
P. Bocij, Derby

• Quite. A computer is hardly ever a business in itself, just a tool whereby you can make money out of your ability to type up and lay out manuscripts, write articles, design pages for people etc. Anyone serious about making a business out of their micro will of course get training; a lorry driver, for example, has to get their HGV before they can go out on the road. It is a highly skilled job to drive eighteen inches behind me on the M4 at 70mph.

• The best way to make a load of money from your micro: sell it, reckons Henry Higgins

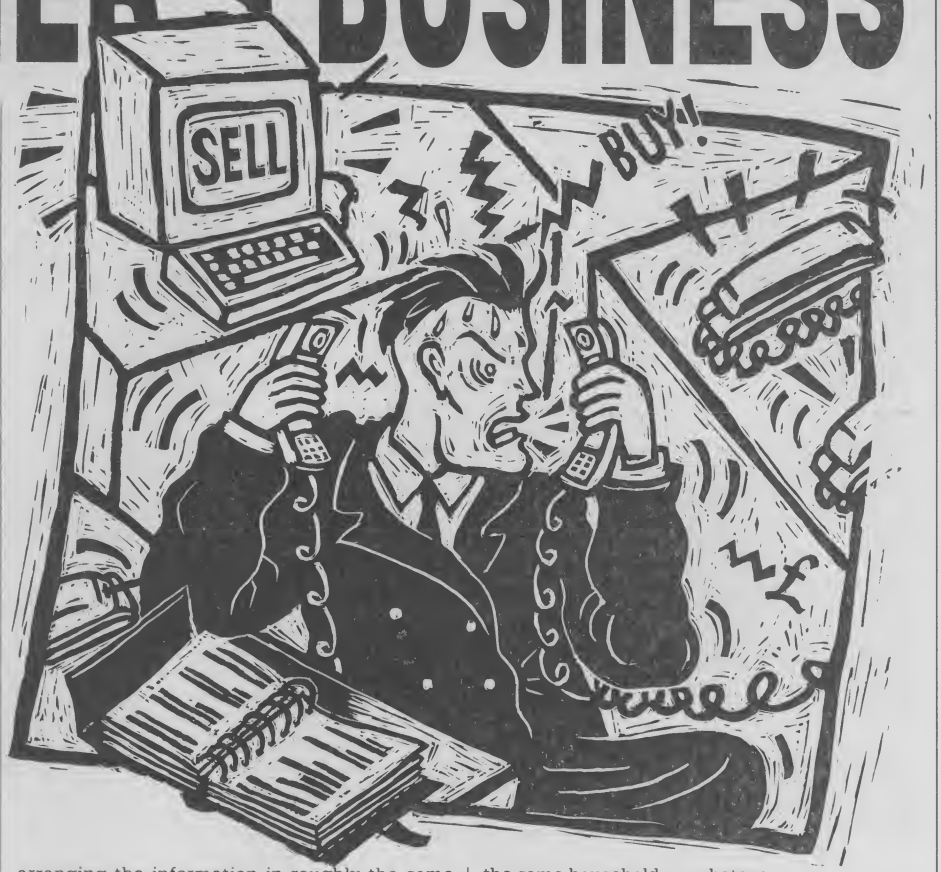
MONEY MATTERS

I read a letter on your magazine last week asking for advice on how to make money from a microcomputer. My suggestions are

1. Sell computer and get a job to fill the time you waste now.
2. Put advert in magazine selling advice on making money from computers. (If you get a reply send this letter).
3. Learn the jargon and persuade a state agency to give you money to start a 'Hi-Tech' Factory.
4. Keep a database of racehorse form and results and flog the data to punters (think it's unlikely that anyone could pay for such stuff? Any Saturday just visit a bookie's office and watch the punters being milked. They're even stupider than computer games buyers)
5. If you are into comms, send a obscene and insulting letter in reply to your phone bill. It will save you a fortune.
6. Start up a mail-order business. When the money comes in disappear. At worse you will get a free holiday well away from computers and meet new friends.
7. Start up a computer magazine and get money for hyping dud games.
8. Get an Amiga and digitise HAM pictures of large pink areas. Then add a couple of lines of code, a title that hints 'Motor Racing Princess' for instance and you are in business.
9. Write a program that will make parents think that their children are not wasting their time playing games. For instance write a game called something dull and worthy like 'Database Construction'. Of course the program itself would be space invaders.
10. Take your computer apart and sell the parts. This should recover about 0.1% of the price. It's about the only way you will get money for an old computer.
Henry Higgins, Co. Kildare

• I'll tell you another computer money-making scheme that sounds impressive but actually is useless. And that's getting a job as a computer journalist.

BEGINNER'S BUSINESS



WHY SHOULD I USE A COMPUTER?
A. 1. Letters are quicker, smarter and easier to prepare with a word processor.
2. Accounts are quicker and easier when done on a computer.
3. It can do costings and estimates for you, much easier than by hand.
4. Customer lists can be kept on disk and certain groups sorted out automatically – just your big spending customers, for example.
5. Mail shots can be prepared easily and look much more professional than a photocopied sheet.

● Q. WHAT DO YOU MEAN, 'ACCOUNTS ARE QUICKER AND EASIER'?
A. Well, you can get special accounts programs for any computer. At their most basic, you enter your transactions – money spent on materials, sales, incidental expenses and so on – and your week-by-week accounts, or end-of-period summaries, are automatically prepared for you. They handle all the tax calculations and so on for you.

At a more sophisticated level, you can have a system like those in use in many supermarkets and stores. At the sale point, there are bar-code readers which read the item code. Not only do they prepare the receipt and add the transaction to the accounts system, they also note the stock control computer. It can, in turn, automatically order fresh stocks from the warehouse when levels drop far enough.

● Q. HOW MUCH WILL IT COST?
A. A small program described as a 'personal accounts' planner or something will be anything from £30-£70 say. It will usually be adequate for a small business. Full accounts programs can be anything from £50-£1000.

● Q. WHAT'S THIS ABOUT DOING COSTINGS AND ESTIMATES?
A. You often hear people talking about 'spreadsheets'. These are, if you like, electronic backs of envelopes on which you can play with figures and make projections. You have a grid of 'cells', labelled A, B, C etc. horizontally and 1, 2, 3, 4 etc. vertically, in which each cell can hold a figure or piece of text or formula. For example, cell A1 might have the word 'Price' in it; A2 might have the price of an item; and A3 the formula A2*1.15 – i.e. the price that was in A2, but with VAT added.

If you enter 100 in cell A2, then the figure 115 will appear in A3. But if you now go back and change A2 – to 120, say – the figure in A3 automatically changes to 138.

By building up spreadsheets with lots of interdependent formulae you can have very complicated models. A typical spreadsheet might have thousands of cells – incomings, outgoings, tax and so on – and you can see what the effect would be on your profits if you raised the price of that item by 1p, or if interest rates go up one more point, or if you close your factories in South Africa.

● Q. WHAT DOES A SPREADSHEET COST?
A. Anything from £40 to £400. The expensive ones can prepare bar charts and graphs for you automatically, based on the figures from the spreadsheet. You're probably best of starting with an inexpensive one. Lotus *1 2 3* is the most famous name, and familiarity with it is a vital asset in business computing.

● Q. CUSTOMER LISTS. WHAT'S THE POINT OF HAVING THEM ON COMPUTER?
A. A database program can keep lists for you, arranging the information in roughly the same layout as those card indexes you use in the library. Add another name and it'll sort them all out, keeping them in alphabetical order if you want, so you can print out an up-to-date version immediately.

But you can also manipulate the information in various ways. Suppose each card has the name, address, phone number, and recent orders. You can, at the touch of a couple of buttons, print out a name-and-telephone number list, selecting just those people who live in London if you wish. You could print a list of your biggest spenders – or biggest debtors. Perhaps most importantly, you can use the name and address list in a mail merger....

● Q. AND WHAT DOES A DATABASE COST?
A. Anything from £20 to £500. The most famous name, *dBase* is really a database programming language; it isn't recommended for beginners.

● Q. OK, SO WHAT'S THIS ABOUT MAIL SHOTS?
A. The idea is that you have a name and address list of your customers (from your database, perhaps) in one file. In another you write a letter that effectively says 'Dear (title) (surname), We would like to introduce our new range of hatstands...' or perhaps '...we notice with concern that your account is £(amount) overdrawn...' The mail merger substitutes the right information from the list and prints out a letter for each person, so you get letters containing 'Dear Mr Stansfield, We would like to...' and 'your account is £56,839.56 overdrawn' and so on.

Mail merged letters can look naff and the 'prize draw' letter is the worst example. And we've all heard of the gas bills demanding a cheque for £0.00 or else they'll cut you off. A well merged letter will target only the people you want to target – selecting, perhaps, only the big spending customers to offer that luxury hatstand. And it won't send letters where they're inappropriate – gas bills for £0.00, or letters to different people in the same household, or whatever.

● Q. AND HOW MUCH WILL THIS COST?
A. It should be in your word processor. Any word processor from £50, say, should have mail merge facilities.

● Q. IT ALL SOUNDS VERY EXPENSIVE
A. Luckily there are cheap all-in-one programs that have word processors, mail mergers, databases, spreadsheets etc. all together. Have a look at *Mini Office*, which is available for a variety of machines from under a tenner on the CPC to £50 on the PC. It'll do all you want to run a small sideline business at the fraction of the price of separate components.

● Q. CAN I CLAIM THE COST OF MY COMPUTER AND SOFTWARE OFF TAX?
A. You can claim the full price of software against tax, provided that it's essential to your business and used exclusively for that purpose – and not a flight sim or a shoot-'em-up!

Hardware such as printers or your micro itself is different. You can only claim 25% of the purchase price in the first year. In the second year, the residual value is deemed to be 75%, so you claim 25% of that; in the third year, it's the purchase price times 75% times 75%, and you claim 25% of that; and so on. And you have to prove that the computer is used exclusively for work purposes, and not to write letters to your mates or play *Populous* – otherwise there's a 'duality of purpose' and the Inland Revenue may not allow you to claim anything!

● Q. WHAT MACHINE WOULD YOU RECOMMEND FOR A SMALL BUSINESS?
A. You can't go wrong with a cheap PC – say the Amstrad. But the ST, Amiga, PCW, CPC *et alia* are all fine and there's plenty of software available. If you're mostly doing correspondence then the PCW 9512 is a good bet – £500 including word processing software, mail merger and daisywheel printer.●

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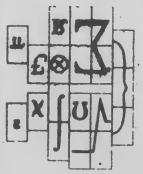

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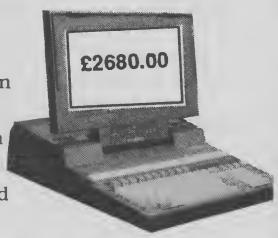

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COLOUR IN YOUR HAND

Hitachi's new colour portable is probably the world's first – certainly the first one you'll be able to buy in the UK. Rob Ainsley was at the launch...

The laptop market is taking off. Sales have been booming over the last couple of years and those mono LCD screens are becoming a familiar sight in the boardroom and on the InterCity 125 .

But up till now they've all been mono. Hitachi, after doing a lot of market research, is launching its first laptop as a colour 286 – taking a lead in the race for the first portable colour computer. NEC have just launched a colour machine in the States, though the £7,000 machine won't be available over here until late 1990 at the earliest, and Sharp are rumoured to be working on a colour laptop for the UK market also for release next year, but Hitachi's HL400C will be in the shops by November, for £4,594.

At the machine's launch last week, Hitachi's UK Sales Manager Steve Sharp, and Russell Joseph, UK Technical Manager, spoke about the new machine.

Q Why is Hitachi going into the already crowded portable market?
SS: Up till recently the portable market was thought of as a niche market – part of the yuppie image. But now it's showing itself to be an expanding market. We're now seeing laptops being used by all sorts of people – gasmen, double glazing reps, pipeline layers...

Q Why a colour portable?
SS: Mainly because we see the laptop market as following the trends of the desktop market, where colour has established itself. Lots of software only really works in colour, and we got lots of feedback in our research from the first laptop users who said they wanted colour.
RJ: By the end of 1990 there'll be at least six colour laptops on the market.

Q Who's going to buy it?
SS: It'll be the same split as for conventional computers – 80% business, 20% private. It'll be particularly effective for anyone who uses the laptop in presentations – the financial sector, insurance and City firms for example.
RJ: A lot of it is psychological. If you're a customer and you see two presentations from people with laptops, obviously the colour one will be more impressive. We're giving buyers a chance to get that psychological lead. Colour's more attractive – it's one-upmanship, if you like.

HOW IT WORKS

TFT (thin film transistors) are made using amorphous silicon rather than crystalline silicon of traditional chip technology. Each pixel needs four transistors, making a total of 512,000 for a CGA active matrix screen. Each transistor controls a small LCD window in blocks of four - red, blue, green and white, the white to increase the contrast, giving a total of 16 colours.

They can switched at 60Hz, which is fast enough for TV pictures. When the transistor is on, the liquid crystals line up behind whichever window is turned on, allowing light from the fluorescent tube to shine on the window.

• Hitachi's CGA portable breaks new ground

SS: It'll be particularly useful with bespoke software, which can really use the colour to maximum effect.

Q Why did you choose to launch it in the UK instead of America?
SS: Though it was developed in Mobaru, in Tokyo, this machine was designed specifically for the European market. The UK market is the third biggest computer marketplace in the world, and with 1992 coming, potentially the biggest.

Q The screen is only 6.3-inches across. Will future models have bigger screens?
RJ: Yes. We're going for a 10-inch screen 386 model well within a year and have a range of colour laptops planned for 1990.

Q Toshiba is currently dominating the laptop market. How are you going to break its hold?
SS: We've got a very aggressive ad campaign lined up – 'Goodbye Tosh, got a Hitachi' is the slogan. We're also being very careful about how we market it. We're choosing our dealers carefully – the ones who we think will give the best back-up service and support. We're very conscious about the end user. This isn't a machine for box-shifters. ●

DIARY OF A COLOUR SCREEN

1960s Research begins on Cadmium-Selenium TFT screens for LCD applications
1974 Use of colour on LCD verified as being possible
1984 First commercial application of colour LCDs on two-inch portable televisions. Research starts on laptop computer screens
1989 Hitachi HL400C with 6.3-inch colour CGA screen launched

THE FIGURES BEHIND THE SCREEN

CPU: 80286 running at 12MHz or 6MHz
Memory: Standard 1Mb expandable to 2Mb
Drives: 3.5-inch hard disk 20Mb, 3.5-inch floppy (720K/1.44Mb)
Display: 6.3-inch colour TFT LCD CGA 640x200 resolution
Keyboard: 81 keys
Operating System: MS-DOS 3.3
Dimensions: 91mm(h) x 324mm(w) x 408mm(d); 7kg
Power supply: Built in rechargeable battery and AC power adapter
Interfaces: Parallel (Centronics) port; two serial ports; RGB port; Two expansion slots (16 bit and 8 bit); external keyboard connector
Options: 1Mb expansion RAM board

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Amstrad 8256/8512	MS	3.44	6.48	14.74
Amstrad 9512 Std. Life	F	3.44	6.48	14.74
Amstrad 9512 Longlife	F	4.30	7.78	17.35
Amstrad 9512 Fbr Colours: Red, Blue, Green, Brown	F	4.30	7.78	17.35
Amstrad 9512	MS	3.44	6.48	14.74
Brother AX10, AX15	F	3.65	6.93	16.42
Brother HR15/25/35	F	3.57	6.78	16.06
Brother HR15/25/35	MS	4.03	7.66	18.13
Citizen 120D	F	3.44	6.48	14.74
Citizen Premier 35	MS	2.43	4.62	10.94
Citizen Premier 35	F	2.99	5.69	13.45
Citizen MSP10	F	4.14	7.87	18.63
Epson FX1000, 105	F	4.30	7.78	17.35
Epson MX/RX/FX100	F	4.30	7.78	17.35
Epson MX/RX, FX800, FX85 FX80	F	3.44	6.48	14.74
Epson LX80/LX86	F	2.47	4.70	11.11
Epson LQ1500	F	4.22	8.03	18.99
Epson LQ800	F	4.14	7.87	18.63
Epson LQ1000	F	4.38	8.32	19.71
Epson EX800/1000	F	5.17	9.52	19.96
Epson LQ2500	F	4.73	8.99	21.28
Epson 2550	F	3.86	7.34	17.37
Gakken	F	4.30	7.78	17.35
Gakken	MS	3.44	6.48	14.74
Hewlett Packard Deskjet	F	12.80	24.30	59.96
Qume 1v Sprint 7/9	F	4.30	7.78	17.35
Qume 1v Sprint 7/9	MS	3.44	6.48	14.74
Seikosha FP800 Longlife	F	4.30	7.78	17.35
Star Radix 15	F	5.47	10.40	24.61
Star SD15	F	5.68	10.79	25.56
Star NX15	F	5.71	10.85	25.69
Star LC10	F	4.30	7.78	17.35
Star LC2410	F	3.50	6.65	15.75
Star NB15	F	6.37	12.10	28.66
Star NL10	F	5.11	9.70	22.99
Star SD10	F	4.81	9.15	21.64
Star NC10	F	4.30	7.78	17.35

MS = Multistrike, F = Fabric

CONTINUOUS STATIONERY

		Forms/Box	Price/Box £
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1 Part 60GSM (M)	*	2000	13.88
1 Part 70GSM (M)	P	2000	15.68
1 Part 80GSM (M)	P	2000	17.40
1 Part 85GSM (M)	P	1000	11.76
2 Part NCR	P	1000	18.60
3 Part NCR	P	700	21.79
4 Part NCR	P	500	21.60
2 Part NCR TINT		1000	22.84
3 Part NCR TINT		750	25.70
4 Part NCR TINT		500	26.00
11 x 9.25			
1 Part 60GSM (M)	P	2000	15.08
11.66 x 9.25 (A4)			
1 Part 60GSM (M)	P	2000	17.32
1 Part 70GSM (M)	P	2000	17.92
1 Part 80GSM (M)	P	2000	20.48
1 Part 85GSM (M)	P	1000	12.76
2 Part NCR 80/57	P	1000	29.20
8 x 12			
1 Part 60GSM	P	2000	13.84
1 Part 70GSM (L)	P	3000	20.36
11 x 14.5			
1 Part 60GSM	*	2000	17.76
1 Part 70GSM	*	2000	19.56
2 Part OTC	*	1000	20.03
2 Part NCR	*	1000	23.60
3 Part NCR	*	700	29.23
11 x 8.5			
1 Part 60GSM	P	2000	13.84
2 Part NCR	P	1000	18.32

* = Plain or Music Ruled P = Plain only (M) = Micro perfs all edges (L) = Laser Quality TINT = Coloured Paper 2 Part - White/Pink 3 Part - White/Yellow/Pink 4 Part - White/Yellow/Green/Pink

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2 3/4 x 1 7/16	8.48	18.04	32.13
3 1/2 x 15/16	7.39	15.52	27.43
3 1/2 x 1 7/16	9.52	21.70	36.83
3 1/2 x 1 15/16	12.96	28.57	51.78
4 x 15/16	7.78	16.61	29.52
4 x 1 7/16	9.96	21.43	38.52
4 x 1 15/16	13.09	28.83	52.13
2 ACROSS			
2 3/4 x 15/16	6.39	13.17	23.04
2 3.4 x 1 7/16	7.61	15.96	28.30
3 1/2 x 15/16	7.13	14.87	26.17
3 1/2 x 1 7/16	9.52	21.70	36.83
3 1/2 x 1 15/16	12.96	28.57	51.78
4 x 15/16	8.04	17.00	30.22
4 x 1 7/16	9.96	21.43	38.52
4 x 1 15/16	12.78	28.09	51.26
3 ACROSS			
2 3/4 x 15/16	6.23	12.85	22.32
2 3/4 x 1 7/16	7.51	15.76	27.80
3 1/2 x 15/16	6.36	15.90	28.10
3 1/2 x 1 7/16	8.48	18.04	32.13
3 1/2 x 1 15/16	11.46	24.63	44.52
4 x 15/16	7.13	14.87	26.17
4 x 1 7/16	9.66	20.83	37.52
4 x 1 15/16	12.68	27.89	50.76

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C6 White Gummed 4 1/2 x 6 3/8	1000	14.12
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DL White S/Seal (Window)	1000	16.71
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C5 White S/Seal 6 3/8 x 9	500	13.13
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5. You must fill in the details on the voucher.

THE SHOPPING EXPRESS BUYER'S GUIDE TO PRINTERS MODEMS AND PORTABLES

The first peripheral most people buy is a printer – a word processor is pretty useless without one! Here we present the Express guide to dot-matrix printers, together with some advice on portables and modems

PRINTERS

Every computer owner needs a printer. From the largest corporate business to the smallest home user the time will come when you need more than what's shown on screen, you'll need hard copy. This listing is a run down on some of the most popular dot matrix machines.

The dot matrix is the most popular method of producing printouts bar none. The dot matrix printer is fast, outputs good quality text and graphics and is the first choice for programmers, corporate users requiring fast reports and home users on a limited budget. The dot matrix consists of a tiny print 'head' (a kind of oblong plastic box) which contains a series of metal pins which are pressed against an inked ribbon and a sheet of paper, thus producing the image.

When choosing a dot matrix printer you should look out for Epson compatibility. All printers use a set of control codes in order to allow computers to tell them what to do - go into graphics mode, do a line feed etc. The control codes used by Epson printers have been accepted as a kind of unofficial standard. Software packages such as DTP and painting programs send out Epson codes to produce their images, so if your printer supports these codes, it will work directly with your software.

The number of pins contained within the matrix head play a large part in the subsequent quality of print, 24 pin being better than 9 pin, 48 pin better than both so watch for that too. And finally compare print speeds. A new printer puffing along at 55 chracters per second (cps) may be fine at first, but you'll soon want something much faster, and print speed doesn't necessarily hinge on price.

● AMSTRAD DMP400

0277 228888
£349
9 pin • 200cps draft 50cps NLQ • 8K buffer • Epson compatible

Bottom of the usable range Amstrad printer, which is unsophisticated, provides only adequate printing quality and which is expensive when compared with similar specified machines from other manufacturers. The device is both Epson and IBM compatible.

Power ★★★

Value for money ★★

● AMSTRAD LQ3500

0277 228888
£349
24 pin • 160cps draft 54cps NLQ • 8K buffer • Epson compatible

Amstrad's wierd and wonderful pricing structure has ensured that this 24 pin printer offering roughly similar specifications to the DMP400 but a vastly improved print quality is the same price - and you can find good discount deals. 160cps draft speed for a 24 pin dot matrix machine is outrageously slow and the 8K buffer doesn't excite thrills of desire.

Power ★★

Value for money ★★★

● AMSTRAD LQ500

0277 228888
£449
24 pin • 288cps draft 96cps NLQ • 8K buffer • Epson compatible

One of the best from the Amstrad stable. Featuring reasonable print speeds, a wide carriage and built in tractor feed as standard, the machine is worthy of consideration by small business persons.

Power ★★★★

Value for money ★★★

● BROTHER 1109

061 330 6531
£195
9 pin • 100cps draft 20cps NLQ • No buffer • Epson compatible

Expensive, underspecified printer from well-known manufacturer Brother who really needs to try harder. Almost £200 for a printer which doesn't have a printer buffer indeed!

Power ★

Value for money ★

● BULL COMPUPRINT 4/20

0422 212781
From £440
9 pin • 200cps draft 40cps NLQ • 7K buffer • Not Epson compatible

Available in a choice of carriage widths and optional serial or parallel interface, the Bull machine is an incredibly expensive, deathly ordinary dot matrix with little to recommend it. Unless you're a corporate buyer with the name Bull indelibly marked on your purchasing order forms, look elsewhere....

Power ★★★

Value for money ★

● CITIZEN HQP-40

0895 72621
£499
24 pin • 200cps draft 66cps NLQ • No buffer • Epson compatible

Citizen have been in the printer business for a number of years and although some of the company's early machines were a little strange, the latest printers are worthy of consideration. The HQP-40 is a fairly expensive, but well made 24 pin printer - but the lack of print buffer should be noted.

Power ★★★

Value for money ★★

● EPSON LX-800

01 902 8892
£279
9 pin • 180cps draft 30cps NLQ • 3K buffer

Bottom of the range Epson 9-pin machine featuring two NLQ fonts, only moderate print quality but the great name Epson on the flannel panel.

Power ★

Value for money ★

● EPSON EX-800

01 902 8892
£629
9 pin • 300cps draft 60cps NLQ • 8K buffer

Epson is *the* name in the printer world. The company whose printer control codes have been adopted as an unofficial standard by almost all other manufacturers. The company's printers are well made, available everywhere and supported by all software. However, the popularity of Epson has ensured the price of the machines has remained inflated when compared with similarly specified machines from other manufacturers. The EX-800 is fast, and of high quality construction. A optional colour adapter is available.

Power ★★★★

Value for money ★★★

● EPSON LQ500

01 902 8892
£385
24 pin • 150cps draft 50cps NLQ • No buffer

Uninspiring 24-pin mid-range printer from Epson. Four built-in letter quality fonts, friction and tractor paper handling and good quality printing.

Power ★★★

Value for money ★★★

● EPSON FX850

01 902 8892
£459
9 pin • 264cps draft 54cps NLQ • 8K buffer

Fast but fairly expensive 9-pin machine featuring innovative cut sheet and fan fold paper handling, quality printing, and fast draft mode.

Power ★★★★

Value for money ★★★

● EPSON EX1000

01 902 8892
£829
9 pin • 300cps draft 60cps NLQ • 8K buffer

One of the top of the range Epson 9-pin

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machines which has a fast draft printing mode, but has a tendency to lose the paper feed after 20 or 30 sheets have been processed. First choice for professional programmers needing listings.

Power ★★★★

Value for money ★★★

● EPSON DFX5000

01 902 8892
£1,699
9 pin • 533cps draft 96cps NLQ • 3K buffer

If you want a mega-fast printer this is your baby. At 533 characters per second in draft, this machine is the fastest of the Epson range. 96 characters in NLQ mode is fairly racing along too!

Power ★★★★★

Value for money ★

● IBM PROPRINTER III

01 747 0747
£417
9 pin • 320cps draft 65cps NLQ • 32K buffer

Fast, and with a huge print buffer and reasonable price tag (when compared with similar machines from Epson and Amstrad) the IBM is the first choice for the corporate buyer.

Power ★★★★

Value for money ★★★★

● IBM QUIETWRITER III

01 747 0747
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274cps draft 171cps NLQ • No buffer

Calling migraine sufferers everywhere! The Quietwriter III from IBM relies on thermal technology to provide whisper quiet operation at at a fast printing speed.

Power ★★★

Value for money ★★★

● MICRO PERIPHERALS MP165+

0706 217799
£198
9 pin • 190cps draft 32cps NLQ • No buffer • Epson compatible

Bottom of usable range Micro Peripherals printer which provides reasonable print quality and speed at a moderate price. Many dealers offer large discounts.

Power ★★
Value for money ★★★★

● MICRO PERIPHERALSMP200+

0706 217799
£299
pin • 240cps draft 40cps NLQ • buffer • Epson compatible

Fast, moderately priced printer which can accept a range of plug-
in font cards ensuring the versatility of the printer. Good deals to be had.

Power ★★★
Value for money ★★★

● OLIVETTI DM250

01 785 6666
£649
24 pin 180cps draft 60cps NLQ 24K buffer Epson compatible

Good quality printer from erstwhile typewriter manufacturer Olivetti. This device features a large print buffer and moderate printing speed. However, the price tag is just a little on the large side.

Power ★★

Value for money ★★

● OLIVETTI DM100/105

01 785 6666
From £235
9 pin • 120cps draft 25cps NLQ • 7K buffer • Epson compatible

Unpretentious little matrix machine from Olivetti which can also be had in a colour version (DM105).

Power ★★

Value for money ★★

● PANASONIC KXP1081

0344 853915
£219
9 pin • 180cps draft 24cps NLQ • 1K buffer Epson compatible

Very popular do matrix printer from well-known manufacturer Panasonic. Reasonably specified, fully Epson compatible and available discounted at a price which will take your breath away this machine is the first choice for prospective printer purchasers with limited budgets.

Power ★★★

Value for money ★★★★★

● STAR LC10

01 840 1800
£229
9 pin • 144cps draft 36cps NLQ • 4K buffer • Epson compatible

Like the Panasonic KXP1081, the LC10 from Star is a very popular, highly desirable dot matrix, featuring good specifications, full Epson compatiblility and a colour option all at a breath-takingly small (discounted) price.

Power ★★

Value for money ★★★★★

PORTABLE COMPUTERS

There's never been a better time to buy a portable computer. Advances in technology, the breaching of the PC compatibles market by Amstrad and the price wars of the major manufacturers have all ensured that you can buy a pocket or laptop computer with processing power which previously would have occupied a room for little more than the price of a toothbrush.

When buying a portable look out for screen quality. Supertwist LCD is clear, high resolution and is very popular at the moment. Gas plasma has a strange orange 'burn-out' glow which many users find distracting. Go for 640K RAM, have a tap at keyboards and feel the weight of a potential machine - lugging it

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around for any length of time will have you cursing a heavy machine.

● AMSTRAD PPC512
0277 228888
£499
8086 CPU • LCD CGA screen • 512K RAM • Single/twin floppy drive(s)

Amstrad has a finger in every pie and the portable PC compatible market is no exception. The entry level machine is the PPC512, featuring a full sized keyboard, but poor screen, not much memory and not much else to recommend it. Look elsewhere...

Power ★★

Value for money ★★

● AMSTRAD PPC640
0277 228888
£799
8086 CPU • LCD CGA screen • 640K RAM • Double drives • Internal V21, V22, V22bis, V23 modem

When first launched, the media recommended the machine as being worth the price for the built-in modem alone. Although quite large and not very pretty, the Amstrad is nonetheless a very usable portable computer at a fantastically low price. Very worthy of your consideration and money.

Power ★★★★★

Value for money ★★★★★

● BULL PC AP-L
0422 212781
From £1,395
80286 CPU • 1Mb RAM • 20/40Mb hard drive
Fast, comparitively lightwieght portable from Bull, featuring a megabyte of RAM and choice of hard drives. Screen display reasonable.
Power ★★★

Value for money ★★★

● COMPAQ PORTABLE II
01 940 8860
From £2,395
80286 CPU • 640K RAM • 20Mb hard drive • 360K floppy

Expensive, under-specified, portable from a dealer with a reputation for high quality and matching high prices. Compaq machines are rugged, but demand fat wallets.

Power ★★★

Value for money ★★

● COMPAQ PORTABLE III
01 940 8860
From £2,995
80386 CPU • 640K RAM • 20/40Mb hard drive • 1.2Mb floppy

Mid range Compaq 386-based portable featuring a choice of drives but lacking sufficient RAM for a machine of these specifications - why cut corners? Reasonable screen display and rugged construction.

Power ★★★★
Value for money ★★

● COMPAQ PORTABLE 386
01 940 8860
From £4,695
80386 CPU • 1Mb RAM • 40/100Mb hard drive 1.2Mb floppy

Top of the range Compaq portable with an optional 100Mb hard drive for those seeking power computing with a capital P. Also featuring a 1.2Mb floppy and a full megabyte of RAM.

Power ★★★★

Value for money ★★★★

● COMTECH TECHNOLOGY 286LT
0964 615100
From £1,995
80286 CPU • 1Mb RAM • 32Mb hard drive • 1.44Mb floppy

Portable from Comtech UK with the unusual distinction of having a gas plasma rather than LCD display. Plenty of features such as high density 3.5 inch drive and 32Mb hard drive ensure the desirability of this machine.

Power ★★★★

Value for money ★★★

● EPSON PC AX
01 902 8892
£2,749
80286 CPU • 640K RAM • 20Mb hard drive

Very popular and well made portable from printer manufacturer Epson. The PC AX features a paper white monitor and is light and very portable.

Power ★★★

Value for money ★★★

● EPSON FD
01 902 8892
£1,199
V30 CPU • 640K RAM • Single/twin floppies

One of the cheaper Epson portables but still with a heavy price tag this machine features a fast V30 central processor and is available with a choice of floppy drives (also available in a hard drive 'HD' version).

Power ★★

Value for money ★★

● NEC UK POWERMATE PORTABLE
01 924 1244
From £2,495
80286 CPU • 640K RAM • 42Mb hard drive

Superior portable from NEC featuring 640 x 480 LCD screen with backlight, three expansion slots and a CPU speed of 16MHz. Altogether a well specified, high quality computer.

Power ★★★

Value for money ★★★★

● OLIVETTI M15
01 785 6666
From £1,105
80C88 CPU • 512K RAM • 20Mb hard drive

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- ★ All leads, manuals and mouse.

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- ★ Separate Keyboard and System Unit
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- ★ F16 - INTERCEPTOR - amazing 3D flight simulator software.
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- ★ FREE MOUSE MAT worth £4.95
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(See the computer press for details).
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MICROMEDIA TV PC engines cannot be used in the Personal Arcade Plus - all other PC Engines are fully compatible).

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The Olivetti range of much covetted portables are well constructed, rugged and compare favourably with the price of machines from rival manufacturers. Unfortunately, this machine suffers from having only 512K of RAM which simply isn't enough for today's quality software.

Power ★★

Value for money ★★

● SCHNEIDER PORTABLE AT

0604 766572
£2,300
80286 CPU • 640K RAM • 20Mb hard drive

Recently suffering much criticism over its Euro PC, Schneider is nonetheless a manufacturer of reasonable quality, cheap computers. The Portable AT is fully specified and follows the Schneider tradition of small prices.

Power ★★★★

Value for money ★★★★

● SMT INTERNATIONAL SUPER GOLF

01 785 2411
From £3,985
80286 CPU • 640K RAM • 40/100Mb hard drive

Portable or a German car? This machines shares a name *and* a level of construction hard to find elsewhere. Featuring an optional 100Mb hard drive, the Super Golf is a worthy of power user consideration.

Power ★★★★

Value for money ★★★

● TANDY 1400LT

0922 710000
£995
V20 CPU • 768K RAM • Twin floppies

A portable computer with a price tag unmatched outside the Amstrad stable, the 1400LT has a CGA-compatible LCD screen and can be plugged into a colour monitor via its built-in port.

Power ★★★

Value for money ★★★★★

● TANDY 102

0922 710000
£299
80C85 CPU • 24K RAM * Optional disk drive

The journalist's choice. Not PC compatible but very compact, very light and with good word processing software built in, this computer should be considered by those needing to prepare documents on the move. There's even a built in modem so you can transfer files while at airports, train stations, in hotel rooms etc.

Power ★★

Value for money ★★★★

● TOSHIBA TI600

0932 841600
£3,195
80C286 CPU • 1Mb RAM • 20Mb hard drive

Mid range Toshiba 286 featuring a CMOS low power CPU, hard drive and memory expandable to five megabytes. Rugged construction and good quality screen display.

Power ★★★★

Value for money ★★★

● TOSHIBA T5200

0932 841600
From £5,495
80386 CPU • 2Mb RAM • 40/100Mb hard drive

Top of the range Toshiba 386-based portable. Memory is expandable to an enormous eight megabytes, there's a 100Mb hard drive option, 2Mb RAM as standard and two expansion slots.

Power ★★★★★

Value for money ★★★★

● TOSHIBA T1000

0932 841600
£795
80C88 CPU • 512K RAM • Floppy drive

Entry-level portable PC. 512K RAM as standard expandable to 1.2 megabytes (if you can afford the DRAMs). The machine has the unusual distinction of having MS-DOS contained on ROM rather than booted from floppy.

Power ★

Value for money ★★★★

● VICTOR V286P

0949 461600
£2,499
80286 CPU •1Mb RAM • 30Mb hard drive

Fully featured portable from rising star Victor with a gas plasma screen display.

Power ★★★

Value for money ★★★★

● ZENITH SUPERSPORT 286

0628 668588
From £3,195
80C286 CPU • 1Mb RAM • 20/40Mb hard drive

Quality portable from Zenith featuring novel 'under the screen' drive arangement providing easy access to floppy. Good screen display, nice keyboard and a case that will withstand impact.

Power ★★★★

Value for money ★★★★

● ZENITH TURBOSPORT 386

0628 668588
£4,995
80386 CPU • 1Mb RAM • 40Mb hard drive • 1.4Mb floppy

Top of the range Zenith 386-based portable featruing a novel battery management system to conserve power and a large capacity floppy drive.

Power ★★★★

Value for money ★★★

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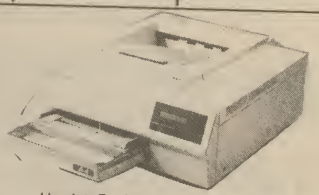

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MODEMS

The last two or three years has seen a massive up-surge in the use of computer communications due to a relaxation of British Telecom controls and advances in modem technology. Original modems came from British Telecom (or rather the Post Office as it then was) were mushroom in colour and resembled shoeboxes. The rarely offered data transfer speeds greater than a few hundred bits per second and were very difficult to obtain. After BT's monopoly on the 'phone system was broken, potential comms users could connect whatever (BT approved) they liked to the telephone network.

Advances in technology led to the arrival of a modem on a chip - everything necessary for data communications one one silicon chip - and the consequent lowering in price and so today, everyone can enjoy tele-computing.

When buying a modem you should look out for the range of data transfer speeds the modem can handle. The faster speed for communicating, the shorter the time taken, the smaller the resultant 'phone bill - and the computer press carried many stories of small boys and girls running up £800 or more with their new modem and parent's telephone.

You should also look for V23 (AKA 1200/75). The V23 standard is known as a 'split baud rate' i.e. you transmit at one speed and the communicating computer transmits at another. Split baud rates are peculiar to the UK and are used by Prestel and many other large information providers.

Finally a word about the standards. V21 means 300 baud (roughly 300 bits per second). V22 is 1200 baud, V23 1200/75 and V22bis 2400 baud.

● AMSTRAD 2400 (INTERNAL)

0277 228888
£179
V21 V22 V23 V22bis

Amstrad modems are held in high esteem throght the industry for being cheap yet fully specified and reliable. The 2400 internal modem is no exception offering a large range of speeds at an amazing price. Fully recommended.

Power ★★★★★

Value for money ★★★★★

● AMSTRAD 2400 (EXTERNAL)

0277 228888
£220
V21 V22 V23 V22bis

As above but in a fitted case for use with any RS232 bearing computer. Again, fully specified and incredibly cheap. Recommended.

Power ★★★★★

Value for money ★★★★★

● MIRACOM WS2000

0473 233888
£89
V21 V23

Entry-level modem which has enjoyed a high level of popularity amongst those wishing to try computer communications without a large investment. The WS2000 is a manual so you'll have to twiddle the nobs to get anything from it, but it's reliable and very cheap.

Power ★★

Value for money ★★★

● MIRACOM WS3000

0473 233888
£345
V21 V22 V23 V22bis

High end Miracom modem popular amongst corporate users featuring the fast 2400/2400 full duplex mode, full Hayes compatibility and a full compliment of indicator LEDs.

Power ★★★★

Value for money ★★★

● MIRACOM WS4000

0473 233888
From £99
V21 V23 (optional)V22

Upgraded, full automatic version of the very popular WS2000 modem. the '4000 features full Hayes compatibility, LED indicators and complete software control.

Power ★★★

Value for money ★★★

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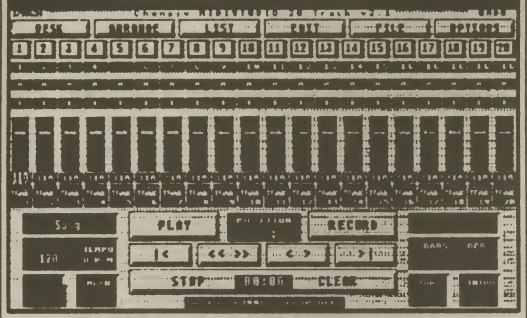

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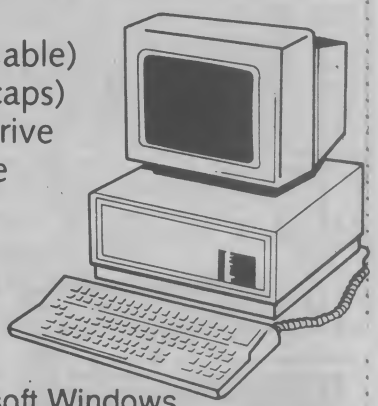

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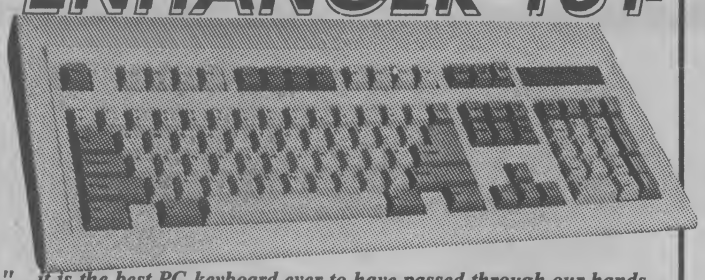

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VISA

HELP hacking defile KTOR tape to disc also OP Wolf and Renegade, I have CPC 464 Plus RAM pack write to: 6, Frank St, Great Horton, BFD BDM 3BT.

HELP PLEASE! Trying to connect serial 8056 Printer to Atari ST. Buffer overflows. Also Coleco, Intell, Atari 2600 owners contact me as trying to start user group. Tel 08677 2298.

HELP! I keep getting killed in the Amiga version of Personal Nightmare. Any tips or even the solution wanted, G. Vassie, 241 Lochfield Road, Paisley, Scotland PA2 7QT.

HELP wanted on Shadow Gate also pokes on Xenon and marble Madness for ST. 100% reply. David Vincent, 39 Post Office Close, Lingwood, Norwich,Norfolk NR13 4EW. Norwich 716082 after 7.30pm.

COMMS beginner using BBC needs urgent help! Contact John-Paul Fitzpatrick, via Prestel MBX. 5955655441 or write to: 8 Sidney Street, Saltcoats, Ayrshire, Scotland KA21 5DD. Know any good BBs?

● MINI TIPS

BBC to cause a <Break> type call !4. Can be used in programs with *FX200,3 to wipe memory clear. Mark.

● PEN PALS

AMIGA contacts wanted. Guaranteed 100% reply. To Des 21 Elmhurst Close, Coven, Wolverhampton WV9 5DX.

PEN Pal wanted to write to in any topic. Girls welcome. AM Jarre and ST fanatic. Details: Paul 21 Main Street, Branston, Burton-on-Trent, Staffs, DE14 3EX. Please write!

AMIGA Pen Pals wanted. Utilities plus P.D. disks. Send lists, 100% reply. Contact Martin Warmington, 13 Wealdon Close, Crowborough, East Sussex, TN6 2ST.

BBC Master contacts wanted to swap tips, etc. Preferably about 15 years, male. Contact Neil Pearson, 464 Thornaby Road, Thornsby, Stockton-on-Tees, Cleveland TS17 8QL. Phone (0642) 763267.

● PERSONAL

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PEN Pal wanted to write to in any topic. Girls welcome. AM Jarre and ST fanatic. Details: Paul 21 Main Street, Branston, Burton-on-Trent, Staffs, DE14 3EX. Please write!

ST user seek's others to swap hint's, tips etc, also looking for STOS users to swap info. Please phone Paul on 0222 567596 Hi Di.

ANY Electronic who wants a friend to swap cheats + games. Send a chatty letter and/or your cheat list to: Boydie, 7 Wryneck Close St Helens, Mercyside.

C-64 Contacts: send details and stamp to: Ryan Donaghey, 23 Melmont Gardens, Strabane, County Tyrone N. Ireland. BT82 9EB Now!! I'm waiting for you so write now!!!!!!!!!!

ITS my 21st Birthday on the 6th Oct wish me Happy Returns as no one else will, & EXPRESS is the BEST. Kev Newbold Kivo Park. Commodore User.

C-64 tape owner needs people to demos. Also Datasette for sale Give me £12.00 or exchange for a joystick in good condition.

ST contacts wanted experienced ST owners only, (no beginners) To swap stuff. Write to M1Z, 1 Everson Close, Tasburgh, Norwich, NRS15 ILL, England. Hello to MPH, CIA, And other Contacts.

ATARI ST. Contacts wanted to swap tips, etc. All welcome, 100% reply. Write to Steven Duff, 45 Albert Road, Clydebank, Strathclyde, G81 3BQ.

CONTACTS wanted to swap cheats, mags etc for Amstrad CPC 464. Tel Martin: (Strabane North Belfast) 88218.

AMIGA contacts wanted, fast and reliable, write to Jeremy, 50 Overhill Drive, Patcham, Brighton, E.Sussex. BN1 8WH or phone 0273 550300 NOW.

WANTED ST contacts, must be into menus sent info to: Nigel, 1 Burnfield Drive, Rudgeley, Staffs, WS15 2RH.

YO! to all you freakey ST owners. Do ya wanna swap all da latest demos, etc? Then write to: Luigi, Eccleston Square Mews, Victoria, London SW1. No AMIGAS allowed.

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● USER GROUPS

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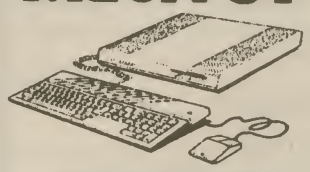

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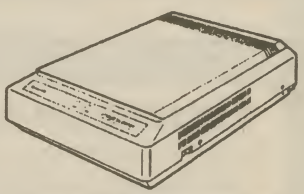

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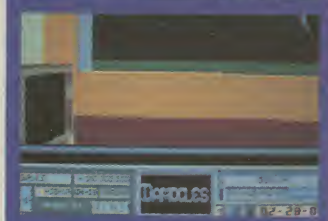
STREET TALK

BY MAFF EVANS

I remember, when I was nowt but knee high to a pigeon, there was this game bein' previewed. *Damocles* it were called...

It seems that Novagen's promised 3D wonder has been in the pipeline for eons. Well this year's PC Show caused hearts to flutter when it was announced that *Damocles* is due for imminent release (gasp!). The game promises involved environments, deep space action and smooth, filled 3D graphics. And... (wait for it, wait



for it) it's to be released on ST and Amiga in mid October for £24.99. Feast your eyes on these screens until it arrives. Meanwhile, I have to have a lie down, this excitement's too much for me!

ANOTHER surprise is the fact that Level 9 is no longer producing text adventures. Long considered the masters of the genre it has now decided to develop a new game environment based around its own structuring system known as H.U.G.E. (wHolly Universal Games Engine), which includes 165,000 lines of code and has taken 20,000 man hours to produce.

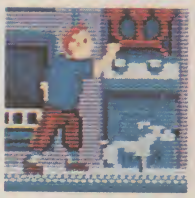
ALSO taking a new direction is Club 68000. Best known for *POW* and *Capone*. The firm is heading into the world of hardware, retailing all manner of add-ons for all computers. To begin with it is releasing a light gun compatible with C64, Spectrum, Amstrad, PC, ST and Amiga. Packaged with three original games, the gun will sell for around 39.

Although it didn't have a lot of new products to show off at this year's show, Psygnosis generated a lot of interest due to the fact that it's looking for new programming staff. If it wants to improve on the standard of its earlier stuff then it looks like we're in for some pretty gobsmacking games in the future!

MINI REVIEWS...

TINTIN OF THE MOON ★★

Infogrames • £24.95 • Amiga version reviewed • Also available for ST, Amstrad CPC, Spectrum, C64



As all you fans of the quiffed one, Tintin is a heroic type of guy, so when the chance comes for him to fly off to the moon, he jumps at it.

Here we join the plot as Tintin, along with his friends Captain Haddock, Professor Calculus, engineer Woolf and (of course) Snowy the dog, blasts off from the launch site in Syldavia.

Unfortunately Colonel Jorgen has dastardly plans to sabotage the ship and along with Colonel Boris, he could threaten the lives of our heroes.

The intro piece is very nicely done, with excellent animation and sound effects, but once the game itself starts things go downhill. The idea is to fly the spaceship, collecting pods to extend the platform section of the game. This consists of Tintin running around with a fire extinguisher, putting out fires and defusing bombs, whilst stopping Colonel Jorgen from causing more damage... and that's it really. The problem is that there is no variety. Once the novelty of the nice sprites and effects has worn off, the gameplay soon becomes repetitive and boring. This is a shame, as *Tintin on the Moon* has the makings of an entertaining little game, but it doesn't quite have the push necessary.

PAPERBOY ★★★★★

Elite • £19.99 • ST verson reviewed • Available now on Amiga (£19.99) and PC (£24.99)

Joe is a clean cut, American schoolboy and like all clean cut American schoolboys he works for his allowance. So what does he do? He is involved in the media distribution business. Oh alright then, he's a paperboy. He trolls off to the newsagents in the morning, collects his bag of papers and sets off, cap on head and feet on pedals to complete his round.

But it turns out that Joe isn't all that clean cut after all. Instead of carefully delivering the papers to his expectant customers, he whizzes up the streets on his bike flinging his load of papers in the general direction of the houses.

Still, who can blame him when the streets are full of opinionated people causing him no end of hassles. Kids with radio controlled cars, tramps, joggers and even unicyclists.

Taking these people out with a carefully aimed newspaper is great fun as you play the part of Joe the Paperboy in this impressive conversion from the Atari coin-op. The original eight-bit releases were not exactly of the highest standard, but the 16-bit versions are looking very good indeed. The ST's sprites are nicely defined and the scrolling remarkably smooth, some of the best I've seen on the Atari. The sound could have been better though, with a few jingles here and there instead of the various tinkly effects. Still, it's a great conversion of an extremely playable arcade game.

HIT LIST TOP 5 GAMES

Is your machine sitting whimpering in the corner, desperate for new software? Well fret no more! We'll will steer you in the right direction of the best games about. Here are five recent games that made *Express* gamers leap about. Well we like them anyway.

1. KICK OFF
Anco • Amiga, ST, C64
Yes, it's still there at good old number one. Well it deserves it! It's the most playable footy game around.

2. STRIDER
US Gold • Amiga
Game of the week this week, this sword-wielding adventure should be in your collection very soon.

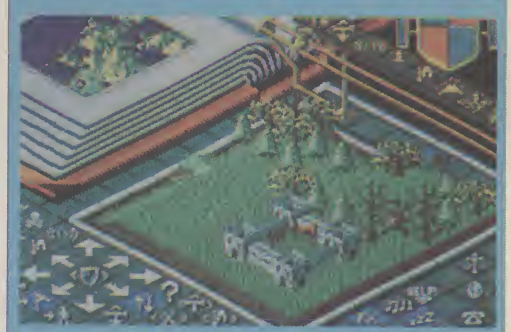
3. INFECTION
16-Blitz • Amiga
Compulsive head to head play in this strange board game – and for just £4.99! What a bargain!

4. XENON 2
Imageworks • ST, Amiga
Slipping down, but still generating its fair share of interest is Bitmap Brothers aurally and visually superb blast.

5. RICK DANGEROUS
Microprose • Amiga, ST
Spelt correctly for the first time, this wonderful platform game is hanging in there by its short hairs and keeping us frantically trying to beat that "next screen".

FIRST PEEK...FIRST PEEK

BUDOKAN & POPULOUS



A double edition First Peek this week, with two "up and coming" PC games fom Electronic Arts. Firstly we have *Budokan*, a martial arts game based around four fighting disciplines – Karate, Kendo, Bo and Nunchaku. Play starts in a school or "dojo", where the sensei teaches the techniques and philosophy for each discipline. When the player has gained enough experience, then they can enter the tournament at the Budokan in Japan. The music coding is being carried out by Rob Hubbard, for use with Adlib and CMS sound boards, as well as being compatible with the Roland MT-32 LA module.

Also corning soon is the now-classic *Populous*, the game which lets you play God – raising your own population whilst destroying your opponent's. Once again the man behind the sound will be Rob Hubbard. The PC version will be able to be linked to other machines (including ST and Amiga) for head to head challenges. *Populous* will be available in November on 5.25-inch and 3.5-inch disk for £24.99, whilst *Budokan* is to be released in December at the same price. Both games support Hercules, EGA, Tandy 16 colour, MCGA and VGA graphics.

TAME the GAME

● XENON 2 (AMIGA)

At last! Some hints for this amazing shoot-'em-up! Here is a list of the weapons pods awarded and what to buy and sell at the shops.

LEVEL 1
Stage 1 gives two speed ups, power up and backfire
At shop –
Sell nothing
Buy power if needed (this applies to all levels)
Stage 2 gives smart bombs, small energy and cannon
At shop –
Sell nothing
Buy double shot and backfire

LEVEL 2
Stage 1 gives small energy and power up
At shop –
Sell backfire
Buy two sides
Stage 2 gives smart bomb, small energy and sides
At shop –
Sell sides
Buy laser, backfire and power up

LEVEL 3
Stage 1 gives two backfires and two small energy
At shop –
Sell backfire
Buy 2 sides
Stage 2 gives smart bombs and two large energy
At shop –
Sell nothing
Buy laser and power up

LEVEL 4
Stage 1 gives shield (for 10 seconds), small energy and sides
At shop –
Sell sides
Buy backfire
Stage 2 gives two backfires and smart bomb
At shop –
Sell backfire
Buy laser, sides, drone and two power ups

LEVEL 5
Stage 1 gives two power ups, large energy, two sides and homing missiles
At shop – Sell cannon and homing missiles (if picked up)
Buy laser, protection, two sides and as many power ups as possible
Stage 2 gives sides
At shop the end sequence is found

A couple of extra things – the prices on level 5 are half the normal amount and WATCH THOSE WEAPONS! You can't have backfire at the same time as a probe, as one cancels the other. The same applies with sides and homing missiles. Also, don't buy the shades, as they're useless.
Harjit, Huddersfield, West Yorkshire

● RICK DANGEROUS (ST)

Here are some tips for the Egyptian level.

"On the stone stairs go to the top step, let the first man go down and drop a bomb just as the other man is on the bottom step above. Then jump up to the top step and continue up.

Where the block drops, go to the blank square and walk left. Jump onto the block and walk off quickly.

On the screen with the second man after the block, wait at the left of the platform and when the man is at the far right, walk off to the left, duck, walk to the ladder and climb up.

When the three blades drop, crawl across quickly.

In the next room, jump off the edge, grab the hand holds and go as far down left as possible, then jump across onto the ladder.

On the screen with two men and spikes on the other side of the floor, kill the first man and let the second fall on one of the spikes.Walk off then face left. Fire, get on the block and crawl off as it goes down.

On the next screen you must jump over the arrows. As one goes behind, go right to the first platform. As one goes over you, jump up and go right to the second platform. Face right and shoot the wall, then go down the ladder.

In the room with a block and a row of spikes, shoot the wall on your right when on the block. Walk right on the block,

STRIDER

GAME of the WEEK

In a futuristic Russia where glasnost is no more you must take on the evil Lord...

Amiga version reviewed • £19.99 • Due out October

Seventy years into the future the Russians will be ruled by a cruel and evil Lord – or so Capcom would have us believe. In this US Gold conversion of the coin-op, you take the role of Strider Hiryu, a brave and fearless warrior who must cross behind the Iron Curtain and do battle with the Evil Lord's minions.

Play starts as you fly into Red Square on your futuristic hang-glider. From here you must fight your way deeper into the enemy area, towards the ruler himself. To do this you must traverse such scenery as towers, girders, sloping roofs, battle domes and snowy mountainsides, to name but a few. This is no problem to our hero, as he can run, jump, slide, climb, swing and even somersault across the landscape, although sometimes an unexpected jump in the wrong place can cause a few problems.

Around the scenery are various nasty type opponents trying to do you in, such as KGB agents, clanking droids and a huge metal snake armed with a sickle.

"But what do I have to help me?", I hear you cry (well I would if you were here). The answer is a mighty sword, which Strider wields so fast and deadly that it only appears as a blur, accompanied by the chink of metal and a grunt from Strider.

Also along the way are flying drones that sometimes carry pods. If the drone is destroyed, then it will drop its cargo, which must be hit with the sword to reveal an extra weapon. One of the most useful of these is a speedy droid, which fires shots into inaccessible areas

then again, then jump off.

In the next room, drop dynamite on the rounded block and jump up to the platform. Kill the man, go down the hole and pull left. Then jump up right and work your way down, shooting the man. Bomb the block at the bottom, then drop down the hole. Kill the three men and go out. This is where the Egypt section finishes."

J Day, Ilkley, West Yorkshire

Well it took a while to arrive, but credit where it's due. These are indeed useful hints, so a prize of Virgin's *Gemini Wing* is on it's way to you – if I remember to post it (only joking, God bless yer!).

● *TARGET RENEGADE* (SPECTRUM)

"Get to the high score table, then type 'OPOPO' etc. for two lines and press [ENTER]. The screen should now go wierd. Complete the level and the screen should go back to normal, giving you infinite lives.

Paul Gooden, Plymouth, Devon

● *BATMAN, THE MOVIE* (C64)

If anyone out there is having difficulty getting off levels two or three (the Batmobile and Batcave sections), then just follow this simple advice....

"When you die, instead of following the instructions, let the tape play and the last level (the Cathedral) will load. Also, to get a high score, find places where there are lots of men (for example the bottom of level one or the top of level five, by the bells) and don't worry too much about the time.

Richard John Hancock, Cannock, Staffordshire

● *LOMBARD RAC RALLY* (AMIGA)

Fed up of getting the questions wrong in the interview section? Well here are some answers...

"The Russian rally team is called the State Rally Team.

A Sierra is 4.46 metres long.

The winner of the 17th New Zealand rally was Franz Whittman.

The Ypres rally in Belgium is held over 24 hours.

The RAC British Motorsports Yearbook is known as the 'Blue Book'.

The FLA Yearbook is known as the 'Yellow Book'.

The rally with more than one starting point is the Monte Carlo rally.

Michael Salem is the champion of Lebanon.

The BMW which is available in kit form is the M3."

B Mooney, Washington, Tyne and Wear

● *MERCENARY – SECOND CITY* (ST)

"Steal the Dominion Dart.

Sell the large box to the Mechanoids.

Sell everything else you can lay your hands on to the Palyars, including the Mechanoid.

Blast all the Mechanoid occupied positions.

You will need the grenade, Prestinium (skeleton key) and the Photon emitter to complete the game."

G R Miles, Nuneaton, Warwickshire

● *XENON* (ST)

"To skip to the next level, press F4. Pressing F5 makes you indestructable"

C Parker, Bristol

DO YOU OWN THESE GAMES?

- **BATMAN**
- **SHADOW OF THE BEAST**
- **STRIDER**
- **DYNAMITE DUX**
- **RICK DANGEROUS**

Are you the *maaaan* when it comes to any of these games? If so then prove it by sending in any tips, techniques or cheats in to me and I'll see for myself. Get your letters along to...

Tame the Game
4 Queen Street
Bath BA1 1EJ

The week's best Game Tamer wins themself a free piece of software from the pile (bet that got you interested, eh?). Also, if you've got a pretty wundy score on any of these games, send it in along with three hints. It could be a winner, so GET WRITING!

MINI REVIEW

INFECTION ★★★★

16 Blitz • £4.99 • Amiga version reviewed • No other versions planned

As promised last issue, here is the review of this weird "board" game on a computer. For those who didn't see last week's preview, *Infection* is like Othello, but it isn't. Oh dear, that isn't very helpful is it? I'll try again...

The game takes place between two, three or four players, on a seven by seven grid. Each player controls a "blob" which starts in a corner of the grid. This blob can multiply from square to square or jump two squares in any direction. If a blob lands in a square adjacent to a blob of another colour, then it spreads to those squares, replacing the blobs occupying them. Got it now? No? Well put as simply as possible the idea is to occupy more squares on the grid than your opponents, by spreading across the board or jumping to capture other squares.

It's actually a lot easier to play than describe! Once you get going it's virtually impossible to stop playing until you've beaten the opponents and even when you do there are different combinations that you can alter to your own requirements, from the layout of the board to the colour of the psychedelic wave patterns on the intro screen. Back this up with atmospheric graphics and a rather haunting Dave Whittaker soundtrack and you've got a very high class piece of software. All this for just £4.99! How can you miss it?

and sometimes walks along platforms to clear the way for Strider. This comes in useful at times, even though controlling Strider you feel as though you have great power at your command. If only it didn't jump when you don't want it to!

GRAPHICS AND SOUND • *Strider*'s graphics are probably it's strongest point. The sprites and animation are particularly impressive, with the main character being able to run, jump and swing most convincingly. The character pictures on the intro sequence aren't too brilliant however, and the splitting title screens have been replaced by a standard Capcom opening page. A few liberties have been taken with the sound too, using basic "synthetic" sounds to emulate the crashing coin-op effects. Surely some more samples from the original could have been used? Maybe not.

This seems rather a shame, since if as much care had been taken to produce these as had been lavished over the game sprites, then *Strider* would have been a simply stunning package.

OTHER VERSIONS • US Gold is being rather cagy about any other versions of Strider, other than they'll be out in October; not even so much as an expected price. Unfortunately, I haven't seen anything except the Amiga version, so you'll just have to wait for further news.

VERDICT ★★★★★

Strangely enough, even though arcade conversions are appearing much sooner after the original than they used to, the quality of these conversions is improving. US Gold's product is very impressive, even though there are a few quibbles over sound and minor presentation, *Strider* is an immensely playable and addictive game and I sincerely urge all Amiga owners to "check it out."

ONE-LINERS

• By the time you read this, Artronic's *Soldier 2000* should be available on the ST and Amiga. According to Peter Wilkinson, Artronic's Operations Director, "the game boasts superlative use of ST and Amiga graphic capabilities with colourful, super-large sprites." Sounds very nice, if you want to see for yourself, *Soldier 2000* is available for £19.99.

• Due out any time now is Empire's comic license *Doctor Doom's Revenge* (Heads up for Doctor Doom!! Sorry, you had to be there). Starring not one but two comic heroes in the form of Spiderman and Captain America, the game takes the form of an interactive comic, split with over 30 arcade sequences featuring the Superheroes and a variety of enemies. The package also features an exclusive genuine Marvel comic, which Empire reckon could become a collector's item, as well as an introduction to the game by Stan Lee himself. The game will be available on all formats at the "usual" prices.

• By the time you read this, the first of Titus' new products should be in the shops. *Knight Force* places you in the role of a time-travelling warrior armed with an ancestral sword, trying to destroy the evil sorcerers and rescue Princess Tanya. The game is available across all formats except PC.

• *Spherical*, that lovely-looking game from Rainbow Arts, has now been converted to other computer formats. The game places you in the role of a wizard, who must use his magical powers to guide a sphere through 100 torturous levels. You must create stones to form a path for the sphere, take out nasty monsters and use teleports to complete your task. The game has been around a while for the ST, Amiga and C64, and is due to be released at the end of October on Amstrad, PC and Spectrum.

• If you've ever fancied yourself as Emlyn Hughes, but can't get the laugh right or lack the suitable pullover, then here's your chance. CDS is about to release the computer version of the TV quiz *Sporting Triangles*. The game can be played solo or betwwen two or three people and includes the Hit-for-Six round, the Jigsaw round and the terribly exciting quickfire round. Sports fans can take the plunge for £9.99 and £14.99 on eight bit and £19.99 on 16 bit.

Playback

Your views on the latest software – call 0225 444439

"Is there a bug in *Xenon 2*? When, for instance, buying sideshots, it removes your rear shooter."

• See Tame the Game for an explanation on that one, whoever you are.

"Why is at that *TV Sports Football* – on either the Amiga or the ST -is nothing more than a lot of pretty pictures with very little gameplay to it?"

Damon Howarth, Proir Field

"A long time ago in your magazine, apparently I won a copy of *Robocop*. A few weeks later I phoned up to say that I've got an Amiga and asked if I could have the Amiga version instead. But I've had neither. Is it a joke? Please do something! Oh, and all those people who complain about the Bitmap Brothers – I'd like to see them do a lot better!"

Andrea North, Cheltenham

• Ooops! If you send me your address, I'll look into the matter presently (palming off lines No. 372). No honest, I will!

"I'd just like to know when *Indiana Jones – the Adventure Game* is coming out on the Amiga. Oh, and *Forgotten Worlds* is brilliant."

Peter Roe, Longside

• It should be out by the time you read this

Something on your chest? Well take the false hair off and speak your mind on the phone. Leave a message on 0225 444439.

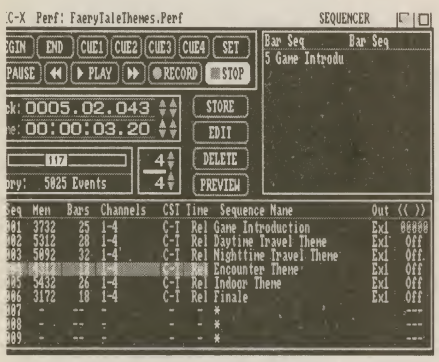
AMIGA BLIT

Music-X for £99?

Nearly every Amiga related magazine has been singing the praises of Microlllusions' long, but eagerly awaited *Music-X* package, but at £225, the relatively high price has kept it out of the reach of the majority of home users.

According to Philip Taysom of Microlllusions Europe, the company intends combating this problem by releasing a cut down version ready for a christmas release. *Music-X Junior*, as the package is to be called, features 24 tracks (as opposed to *Music-X*'s 250!), has no event editor (although the powerful bar editor will still be available), time code support (such as SMPTE) has been removed and the program does not allow the inclusion of patch editors (although you will still be able to connect in additional modules).

Even with this reduced specification, *Music-X Jnr* is still superior in performance to the vast majority of the competition. *Music-X Jnr* will be sold for £99 while the professional version will remain at its current £225 price level. Serious musicians will continue to go for *Music-X*, but *Music-X Jnr* should help Microlllusions to clean up the lower end of the music market.



• **Music-X – *cut down version due before Christmas***

Gold Disk goodies

Users of Gold Disk's highly regarded colour DTP system, *Professional Page*, will be pleased to hear that the company is already working hard on a follow up in the form of *Professional Page 2*.

Only recently, Gold Disk released an upgrade to the current release to knock *ProPage* upto version number 1.3. Most importantly among the new features in version 1.3 is the inclusion of full support for Agfa/Compugraphic font technology to allow the best possible results with non-PostScript compatible printers *à la PageStream*.

Details of *ProPage 2* are still a little thin on the ground, but it seems that Gold Disk has been listening to many of the criticisms levelled at them concerning *ProPage 1*. One complaint in particular was the inability to handle multiple documents at the same time, and it seems almost certain that this will be fixed with the release of version 2.

Version 1.3 of *ProPage* is still not officially available and therefore *ProPage 2* is still a very long way off. If you're planning on buying *ProPage*, don't hold your breath for version 2 – buy yourself 1.3 and then upgrade later.

Also on the way from Gold Disk is a new version of the structured drawing package, *Professional Draw*. The most important aspect of *ProDraw 2* is the increased control over text rendering. Among other sophisticated features, the program will feature many Aldus *Freehand*-like features such as text warping etc.

Deluxe Deluxe Video

Upgrades seem to be all the rage within the Amiga industry these days, with many top Amiga packages being upgraded almost simultaneously. The next heavyweight package to receive the upgrade treatment is Electronic Arts' aging animation package, *Deluxe Video*.

Deluxe Video version 3 sports an enhanced user interface that gives you greater control over your video productions. Using *DVideo 3*, you can pull together productions utilising graphics in any resolution, play high speed animations and add music using either external MIDI devices or sampled sounds, all of which are controlled using a powerful Intuition-based front end.

Music invasion

After the phenomenal success of the excellent *Music-X* from Microlllusions, the Amiga music market has exploded with the announcement of several new products to make the Amiga a viable alternative to the STs and Macs in the recording studio.

Although it's starting to get rather long in the tooth these days, a lot of interest has surrounded the Amiga version of Steinberg's *Pro-24* sequencer. The latest news is that Amiga *Pro-24* has been delayed and will now not be available for at least another month due to problems with the copy protection system.

Rumours had also been floating around that Steinberg had definite plans to produce an Amiga version of its latest ST sequencer, *Cubase*, complete with *Cubase*'s unique MROS multitasking operating system (multitasking on the Amiga? that's a novel idea!). However, when I spoke to Evenlode SoundWorks, UK distributors for Steinberg's products, the company assured me that they had nothing from Steinberg to confirm these rumours.

Users of *Doctor Tobenfeld's Keyboard Controlled Sequencer* (*Dr.T's KCS* to you) will be pleased to hear that the company is soon to release an upgraded version in the shape of *KCS* 1.7. According to a spokesperson at MCMXCIX, the official UK distributors of Dr.T's software, version 1.7 will include a major overhaul of the user interface to take full advantage of the Amiga's windowing environment.

I've finally managed to get my hands on a review copy of Passport's *Master Tracks Pro*. So far the program looks good, but for a full overview of this powerful program, check out next week's AmigaBLIT.

Jason Holborn

Message Port

If you have any comments on any issues raised within AmigaBLIT, or in fact the Amiga scene in general, then why not let your views be known by writing them down and sending them into AmigaBLIT. Similarly, if you have any great hints, tips, tricks or cheats for the latest Amiga games then I'd also love to hear from you.

Send you letters to: JASON HOLBORN, AMIGABLIT, 4 QUEEN STREET, BATH BA1 1EJ. Right, stop reading this and get writing!

ST

Atari goes show mad

The PC Show's finally over so now maybe we start seeing some of the great products we've heard so much about.

Atari's presence at the show was surprising. With the largest stand, I expected to see something of their ST-compatibles but instead most of the Atari Village was dominated by their PC range. The STE didn't make an appearance anywhere which left the TT and Stacy banished to a dark corner.

Still, I managed to play with both. All the hype has been suggesting that the Stacy laptop would be sold in the UK in two models. The first would have no hard drive, selling for £799 while the other would incorporate a 20Mb hard drive, taking the Stacy up to almost £1500. However, Atari has decided not to sell the lower end model in the UK because, according to Peter Walker, they 'don't see a market for it.' One, two and four megabyte versions will still be available.

The idea of running *Protext* to do word-processing while in transit is appealing and musicians eager to compose music on tour would be hard pressed to find a better machine. Screen updating is slow and the laptop is so heavy you'd plummet through your seat if you tried to use it on your lap but, nevertheless, there seems to be no compatibility problems. Hisoft were showing the Stacy running *Spectre GCR* (more on that later) to prove that it really is a powerful machine.

But if you're after mega power then it's the TT you want. 256 colours from a palette of 4096 make it possible to display photograph-quality images. Atari had five new TTs there which had just come in from Germany and they reckon these will be on sale by November. These versions were supposedly saleable, however while claiming full compatibility with existing ST software, the TT wouldn't run *First Word Plus* properly. Is this a taste of things to come?

Serious news

Fleet Street Publisher, Mirrorsoft's enormously versatile DTP package, has now been upgraded and the extra features will make it a serious rival to *Calamus*. Unfortunately, the screen updating is still fairly slow but one of the most important new features is its handling of multiple page documents. Previously multiple pages had to be saved as separate files but now you can have as many pages as you want depending on the name of the file. For example, if you named a file `REPORT` then this would be renamed to `REPORT00.PAG`. The 00 extension is the page number so you could use up to 99 pages in this instance. They're still saved as separate files but, as far as you're concerned, they're all one document.

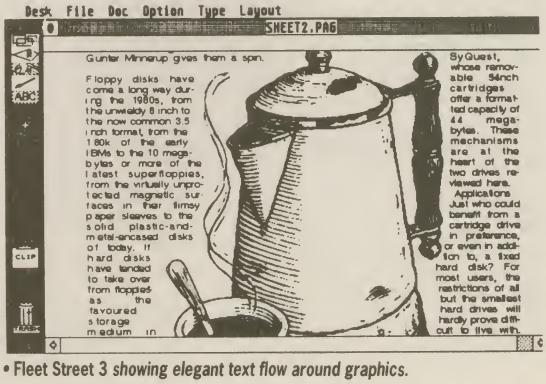
You can now also import GEM metafiles and an improved range of editing facilities let you manipulate them easily. It's now possible to draw a line around images and text will run around this line. This irregular text repel block is treated separately to the image.

An option to group boxes is likely to make it easier to layout pages. By grouping several boxes together you can move them around as if they're one object and rescale them together.

One of the best options is support for PostScript. The entire page can be saved on disk as a PostScript file so that you could then send it to a bureau for specialised printing.

On top of all of this is a phonetic spell checker. This puts up an option box when it comes across a suspect spelling. If you spelt *phonetic* as *fonetik* then the correct spelling would be suggested.

Fleet Street 3 will be available for £200 in November. Upgrades will cost £100. Mirrorsoft can be contacted on 01-928 1454.


Desk File Doc Option Type Layout
SHEET2.PAG
Gunter Minnerup gives them a spin.
Floppy disks have come a long way during the 1980s, from the unwieldy 8 inch to the now common 3.5 inch format, from the 180k of the early IBMs to the 10 megabytes or more of the latest superfloppies, from the virtually unprotected magnetic surfaces in their flimsy paper sleeves to the solid plastic-and-metal-encased disks of today. If hard disks have landed to take over from floppies as the favoured storage medium in
SyQuest, whose removable 5¼inch cartridges offer a formatted capacity of 44 megabytes. These mechanisms are at the heart of the two drives reviewed here.
Applications
Just who could benefit from a cartridge drive in preference, or even in addition to, a fixed hard disk? For most users, the restrictions of all but the smallest hard drives will hardly prove difficult to live with.

• **Fleet Street 3 *showing elegant text flow around graphics.***

Mac magic

Hisoft was showing *Spectre GCR* at the show. This is the major update to the Mac emulator, Spectre 128, which allows you to read Mac-formatted disks. Mac disks are notoriously difficult to read because the Mac drive operates at varying speeds depending on the track being read. *GCR* plugs into the cartridge port and a lead then comes from this and into the second floppy drive port. An extra floppy port is provided in the cartridge so there's no need to sacrifice your second drive. As a result you can take Mac programs such as Quark *Xpress*, place them in the internal or external drives, and run them directly on the ST without any need for transfering files. The drive will run as fast as a genuine Mac.

GCR is supplied with *Spectre* version 2. This includes a better sound driver (although still not as good as a genuine Mac), greater compatibility and large screen support.

At the show, *GCR* was running on the Stacy. In the light of Apple's recently released Portable Mac, this makes the Stacy a much a cheaper alternative.

GCR will retail for £379 in November, including Apple Mac ROMs. Upgrades will be possible but Hisoft has yet to announce a price.

Hisoft can be contacted on 0525 718181.

Ditto – eventually

The long-awaited *PC Ditto 2* was supposed to be at the show but was noticeable by its absence. This software-based PC emulator is the follow-up to an earlier version by the US software house, Avant Garde. For months now, Avant Garde has been promising the new version, with callers to the branch told, by a recorded message, that the new one will be along soon. It's enhanced features are supposed to include greater compatibility with PC software and, most important of all, extra speed. It will be compatible with 3.5-inch and 5.25-inch drives when it eventually appears but even Power Computing, the UK handlers, don't seem optimistic about seeing it before Christmas

Kim Harmagh

PC UPDATE

Psion laptop

One of the most interesting things at this year's PC Show was the new range of laptops from Psion. These lightweight portables, known collectively as Mobile Computers, embody a lot of technological advances, including 'flash EPROM'. This is a new kind of Electrical Programmable Read Only Memory which can be erased electrically, rather than by 20 minutes under a sun lamp. The new chips were developed jointly by Psion and the US chip wizards Intel.

The 4.5lb computers also have the latest in LCD displays. Although they aren't backlit, the contrast of these screens is particularly good. Battery life has also been extended and the new machines should be capable of at least 60 hours of continuous use with alkaline or rechargeable cells. This extended life is partly due to the use of flash EPROM cards instead of disk drives, and partly to the low-power requirements of the processor and display.

A microphone and loudspeaker are included in the case of the Mobile Computers and innovative compression routines help store up to half an hour of speech on a 512K EPROM card. This is more useful than you might think, and even allows verbal annotation of files.

The new technology extends further with the use of a touch sensitive panel above the keyboard in place of the mouse. Moving your finger around the panel moves a pointer around the screen of Psion's proprietary WIMP interface. This gives access to several built-in functions, including a text editor, card file and diary. ASCII files can be transferred to a PC through a Psion brand comms package which lets you control your PC's drives from the Mobile Computer.

Mobile Computers come in three varieties. The MC 200, which has a small display and runs the Psion graphics interface (not MS-DOS compatible) costs £626.75. The MC 400, which has the full 80 x 25 display, costs £971.75, and the MC 600, which is MS-DOS compatible, costs £1719.25, largely due to the DOS licence fee. Psion is obviously not selling on price (all prices include VAT), and it remains to be seen how they sell against the new breed of laptops, like the Zenith Minisport, NEC SuperLite, and rumoured machine from Cambridge Computers.

• Not just a pretty face, but also the world's first Psion Mobile Computer user. Dr David Potter, Psion's MD

Sources for US software

A quick call from Software Paradise the other day put me right on the two US packages I mentioned the other week in this column. Both *The Builder* and *Logic GEM* are available from the company, which will save you a lot on postage and telephone calls. Instead of ringing 0101-something, ring Software Paradise on (0222) 887521.

H.U.G.E.

Level 9 Computing, best known for its very excellent adventure games, has developed an in-house games engine with a couple of rather special extras. For a start *H.U.G.E.* will run on virtually all the current 16 bit computers, including the PC. Next, it handles animation, scrolling backdrops and most of the other goodies modern games require.

Before you start pestering for details, though, it's really intended for games publishing houses, it still needs to be integrated with hard assembler code and it's not likely to be released for the cost of a couple of rounds down the local. Still, it's interesting to know what the professionals are up to, isn't it?

Folio shareware

Also seen at the PC Show were two hard-working lads bundling up shareware disks like there was no tomorrow. They were enlightened enough to offer journos a free copy of their starter pack, which includes demos of some of the major packages and copies of interesting utilities and games. The twin disk set is well presented and together with the catalogue gives a good insight into a fairly extensive selection of software.

Give them a try on (0274) 393679 or write to Folio Shareware, Westbrook Works, 140 Thornton Road, Bradford BD1 2DX.

Elk paper

Following on from last week's feature on Green computing, you might like to try and obtain Elk paper, if you can't get or can't afford good quality recycled sheets. Elk is a Scandinavian outfit which produces paper through the time-honoured method of chopping down and pulping trees. However, this doesn't despoil the rain forests or any woodland, as the company plants a particularly fast growing species which reaches full maturity in around four years. This means that the only trees felled are those planted but a few years back, and the waste is used to nurture the saplings of the next generation.

Ask you stationers for more details. Recently quoted prices are around £2.90 for a ream of 80gsm copier paper, which is on average about a pound cheaper than a similar ream of recycled paper. If you use a laser printer, check that whatever paper you buy is suitable for photocopiers. Paper made for duplicating machines is often too fluffy for use in a laser printer and can cause damage.

Outrun

Is there anybody out there who hasn't played *Outrun*? This is the cruising arcade game where you try and steer a Ferrari Testarossa through, or should that be around, increasingly difficult terrain. Well there's a new version, *Turbo Outrun*, out for Christmas on a variety of home computers including the PC. It was previewed at the PC Show and one of the levels includes a simulated blizzard with you and your stalwart companion swerving between the snowflakes.

If only they'd brought the game out eight years earlier they could have saved a lot of programming time. PCs built around 1981/82 produced any any amount of snow, ideal for *Outrun*, but not for most other applications.

Simon Williams

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*Blitz 1.1 can upgrade to Turbo for £5.00 handling and shipping only. All upgrade orders by mail (cheque) only.

CPC centre

Software goes cheap

Now is your chance. If you're thinking of investing in some serious software, Arnor has reduced prices on many of its disk-based CPC programs – some by as much as 50%.

The world's very best word processor *Protext*, for instance, is now £50 – and that includes a free copy of a guide to Protext written by our own, our very own Rob Ainsley, editor of this fair organ (and very good it is, too, even if he did sub this bit in himself).

The highly acclaimed assembler *Maxam II* drops from £49.95 to £24, and the BCPL systems programming language tumbles down from £24.95 to £12.

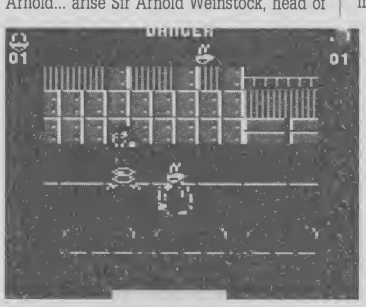
You'd be well advised to contact those nice people at Arnor pronto on 0733 68909.

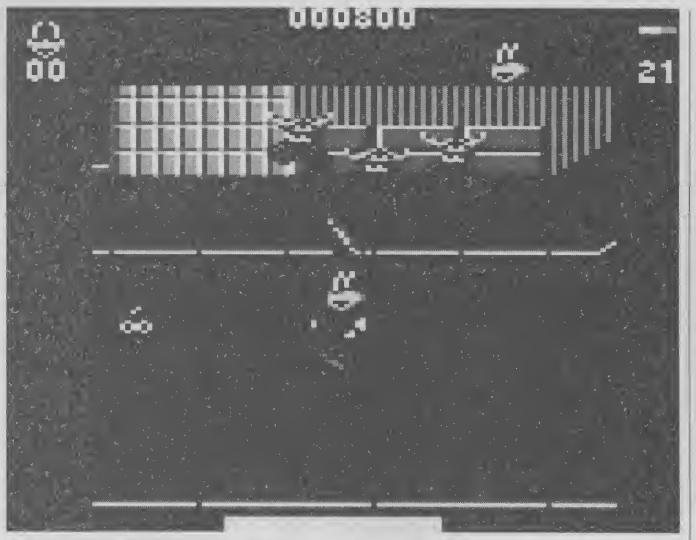
CPC book of oddities: 2

CPC's nickname "Arnold," once so popular with magazine headline writers, was the machine's codename while it was in development. Project co-ordinator Roland Perry – after whom, by the way, all those ancient Roland games were named – was able to watch with considerable amusement as shrewd industry veterans (in this context: five years in the computer trade) put two and two together and came up with 3,947: Arnold... arise Sir Arnold Weinstock, head of GEC!

This superb smokescreen was not so successful, however, when the prototype machine (casing produced first, by the way) was shown to one prospective project member. He took the lid off and found "Amstrad" stamped on the PCB. Collapse of secret party.

Perry also claims, not entirely convincingly, that it was years before he worked out that Arnold was an anagram of Roland.





• *Two tastes of duck: Activision's highly enjoyable* Dynamite Dux

Game for a buck

Dizzy, Codemasters' allegedly cute'n'cuddly money maker and star of *Dizzy, Treasure Island Dizzy* and the soon to be released *Dizzy III – The Bloodbath*, may soon be generating even more moolah for the budget veterans (in this context: four years in the software trade).

So distracted are the young millionaires by all the calls they get from stroppy eight year olds demanding to know how the Oliver twins' Mr D can pick up the snorkel without getting it in the neck, that they're said to be considering seriously a Dizzy "Listen To My Asthma"-type 0898 line with hints and tips for the character.

At £16 per 10 seconds (off-peak) the scam could prove highly profitable, even if it does give the occasional parent heart failure when the BT bill arrives. Indeed, I expect the Darlings will soon be able to take this cult of personality to its ultimate conclusion and cancel any further software altogether. Just a thought, lads, just a thought!

Incidentally, it seems that our upmarket 16-bit cousins are finally catching on. We CPC bods have long enjoyed a sizeable budget market, and it now seems the software houses have done their sums and calculated that, well, perhaps £30 for a game is a tad on the steep side. Codemasters itself is planning an assault, and Virgin/Mastertronic has already announced a £4.99 price point.

It's still two and a half times what we're used to paying for budget games, but to hear the astonished reaction from the Amiga and ST owners you'd think they were giving the stuff away free! Oh how we laughed.

Dux: deluxe

I've never been absolutely crazy about vigilante and violent rampage type games like *Op Wolf* and *Renegade*. It's not that I believe they do any harm – they're probably release rather than generate pent-up tension – but simply that they bore me.

So I'm glad to see that there's a growing tendency for well-written games that parody the form. Recently we had Microprose/Firebird's hilarious and totally wonderful *Rick Dangerous* (nice to see it doing so well in the charts, by the way). Now there's Activision's conversion of the hypercute arcade game *Dynamite Dux*.

I've been playing it all week on the CPC, and refer you to last week's five star "Game of the Week" review in this very mag. Our version is every bit as playable as the 16-bits – and it loads a damn sight quicker, too!

Dynamite Dux costs a tenner on tape and £15 on disk from Activision and is worth every penny.

Steve Carey

Poking Netherworld

Those of you who have not yet handed in your Multifaces to the appropriate authorities (viz FAST, prop Bob Hay) may find the following of interest. It's a set of pokes from the rather spiffing Graham Smith for the equally spiffing Netherworld:

Address	Poke	Effect
27BF	ØØ	Infinite lives
25C9	C9	}
26D5	C3	} Infinite energy
2174	ØØ	Infinite brick smashers
2328	ØØ	Infinite demon killers
1817	ØØ	}
1819	FF	}
181B	3E	} Extra time –
181C	Ø5	} count starts
181E	FE	} at 500

Written any good pokes lately? Send your infinite heat seaking missiles poke for *Dynamite Dux* to: CPC Centre, NCE, 4 Queen St, Bath BA1 1EJ.

Such has been the outcry that I've decided to withdraw last week's offer of a big girlie kiss in exchange for your listings. (Regular contributor and family man Phil Howard, for instance, is believed to have upped and left the country.) Instead I'll just promise to be forever in your debt – you won't be the only one, not by a long way.

SPEX

PC Show offs

Somewhere in among the forest loads of of posters, hordes of freebie-seeking youths and quantities of hype unrecorded since, well, the same event last year, there were a few interesting goodies for Spectrum owmners at the latest PC Show, all of them much more tasty than an Earls Court hot dog.

As usual, most software houses were promoting their wares with a cunning combination of of coin-ops set to free play, fast cars and lots of PR girlies – in pretty much equal quantities. For all those who weren't there here's the dirt on some Speccy products which got me more excited than the aforementioned.

One thing which really causes wibbly knees and excited gurgling noises, from me at least, was the first public airing of the two new Speccy light guns, the Amstard/Virgin Magnum and the Cheetah Defender. I'm afraid the Magnum was a bit too flimsy and delicate for my liking, it's also more expensive and doesn't seem to interact with its bundle of games quite so well as the defender, which looks to be a much better piece of kit all round. Still it was good to see Amstrad promoting the newish Spectrum +2 and +3 Action Pack bundle (which includes the lightgun and software, to the best of its abilities. Good on you Alan.

Domark had a working version of their Crimbo game *Hard Drivin'* to show off. This is another one of those mission impossible conversion jobs from a coin-op with more hydraulics than a fleet of JCBs and a custom chip more powerful than hundreds of Speccies being put to use keeping track of how many lives you have left. Perhaps surpisingly the Speccy *Hard Drivin'* demo looked very good with delightful solid 3D scenery straight out of an Incentive Freescape game. It moved pretty slowly but hopefully things will be speeded up by the time it's unleashed on an unsuspecting audience in November. As well as interesting looking title like *Pictionary* and *Toobin'*, Domark has also secured the right to computerise some more Atari arcade machines including *Cyberball* and the latest – *Escape from the Planet of the Robot Monsters*. If they're programmed to the same high standard as *APB* and *Licence to Kill* I'd reserve your copy immediately.

The Edge has an impressive bevvy of licenced games to tempt the Sterling from your wallets between now and Christmas and beyond. These include Snoopy and Garfield games and some very impressive Marvel comic licences including *The Uncanny X-Men* and two games based on Marvel's *The Punisher*. I hope to bring you further details on them in a future Spex.

Of course there was lots more, but I was disappointed to see most of the software houses bombarded punters with film clips and the like rather than letting them have a go on demo versions of forthcoming games. Let me know what you think by writing to the usual address.

Smaller show

Delmont Betts has just sent me details of another computer show. Although the venue of the Tamworth Arts Centre, Staffs, sounds smaller nd slightly less glamourous than Earls Court, the Eight-bit Micro show that's being held there on November 26 should be worth going to. It's only 50p and during the day posters, badges and a whole computer are being given away. Bargain hunters, apply within.

Old hacks

A benevolent chap by the name of David Smith has just showered me with, among other things, some great pokes for a few old but very worthy Mastertronc games. Here's your chance to dig them out from under the bed and lay them to rest once and for all! Thanks to David for those, he will be recieving his award very soon.

Robin Alway

▪ Voidrunner (infinite lives)

```
10 FOR N=6000 TO 60020
20 READ A:POKE N,A:NEXT N
30 RANDOMIZE USR 60000
40 DATA 55, 62, 255, 33, 220, 72,
221, 33, 0, 128, 205, 86, 5, 62,0,
50, 255, 155, 195, 0, 128
```

▪ Stormbringer (infinite energy)

```
10 CLEAR 25170
20 LOAD "" SCREEN $
30 LOAD "" CODE: POKE 40161,0
40 RANDOMIZE USR 37632
```

▪ Bosconian (infinite lives)

```
10 CLEAR 25599:LOAD"" CODE 16384
20 LOAD "" CODE 25600:LOAD "" CODE
32765
30 POKE 33356,60:RANDOMIZE USR
32765
```

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ATARI ST

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For the serious home user and the small business, we are pleased to announce a new package based around the 1040ST-FM. The 1040ST-FM has 1Mbyte RAM and a 1Mbyte built-in disk drive. In addition, the 1040ST-FM now comes with a TV modulator built-in. (The previously available 1040ST-F was designed for use with a monitor only and did not come with a modulator.) This modulator allows the 1040ST-F to be plugged directly into any domestic TV set, and comes complete with a lead to allow you to do so. The new 'Professional Pack' from Silica includes the new 1040ST-FM with modulator plus four high quality software packages including a spreadsheet, database, word processor and programming language. This 'Professional Pack' software will enable you to get straight down to business with your new computer. In addition to this software (worth £384.84), if you buy the Professional Pack from Silica Shop, you will also receive the Silica ST Starter Kit (worth over £200), Free Of Charge. Return the coupon for further information.

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The MEGA ST computers are styled as as lightweight keyboard with a separate CPU, connected by a coiled telephone style cable. There are two versions of the MEGA ST, one with 2Mbytes of RAM and the other with 4Mbytes. Each version has a 1Mbyte double sided disk drive built-in to the CPU unit. The MEGA ST's do not come with modulator built-in and must therefore be used with a monitor. With every MEGA ST purchased, we will add the 'Professional Pack' software (worth £384.83) detailed above, plus the Silica ST Starter Kit (worth over £200) both Free Of Charge. Return the coupon for further details.

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Desktop Publishing (DTP) is one of the fastest growing applications for personal computers. We are pleased to announce a powerful low cost package for the Atari ST called PageStream. PageStream costs only £149 (+VAT=£171.35) and, because it works with an Atari 1040ST and a Seikosha SP-180AI printer, you can be up and running with a complete system for less than £1000. Some of the features of PageStream are listed to the right. If you would like further information on this program, complete and return the coupon below, ticking the 'DTP' box in the corner.

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Do you already own a computer
If so, which one do you own? ..... DTP ☐

THE ARTS O

Wembley Conference Centre was the venue for the fifth Milcomp - an exhibition dedicated to military hardware and software. Ken Mosley left his bunker to investigate.

MILCOMP'S easy enough to get into. They don't even check your credentials - but try taking a photo or collecting information packs and it's a different story. Two hundred exhibitors showed everything from the latest in megablast-proof PCs to 3D digital satellite reconnaissance mappers. Jet and destroyer sims sat side by side with supercomputer graphics modelling. The overriding trend is towards the complete automisation of the modern battlefield.

The advent of the portable personal computer has revolutionised the development of defence equipment. Although electronics account for more than half the cost of any modern weapon system, small, rugged and powerful PCs are also thick on the ground - allowing battlefield data to be processed at a tactical level. This has in turn led to the development of high-speed comms equipment available for the front-line soldier and the means of actually hooking up a PC to aim, control and launch equally portable missile systems.

Milcomp '89 served as a window on the state of the art of war. But remember, this is only the public domain stuff – the exhibitors weren't showing the equipment the Russians are really worried about.

Front-line facts

Electronic warfare command-post computers come in two flavours. Message terminal devices are principally designed to manage communications networks and process logistics. These are typically custom 16-bit units with gas plasma screens and fast RS232 links, able to operate at temparatures as low as -25C and extremely shock resistant. Most of the custom software is written in C. Also included in this category are 'front-ends' for weapons systems – tactical artillery computers which manage as many as eight guns and handle up to 100 specified targets.

The other kind are portable displays which detail the topographical data of a region, over which can be laid info on enemy forces and structures. Intelligence analysts manipulate the display to show 'what-if' battlefield scenarios based on data retrieved from signals intelligence, ground-based radar, sound-ranging systems, human obervers and airborne/space based radars.

BACK TO BASE

• A Cray-2 supercomputer was recently installed at the Star Wars test-site at Falcon Air Base in Colorado. Using both parallel processing and neural networks, the Cray-2 helps simulate nuclear war scenarios. Eight remote satellite sites across North America help correlate the network simulations. Of course, the scenarios are unverifiable – there's no experience of global nuclear war to draw on. All they can do is run as many different ones as possible.

• Realistic imaging systems or simulators are now generated in parallel processing environments because colour changes of millions of pixels need to be handled in 1/25th second for smooth rendition of complex scenes. Central to their efficacy for military purposes is the need for flexibility. Digitisers are used to import new features from plans and photos to update visual databases containing models of 'enemy' terrain, runways, ports and target vehicles.

• No military plan would be complete without a detailed geographical information system (GIS). The trick here is to convert 2D photographic satellite reconnaisance into 3D terrain modelling. A GIS like Intergraph's IMAP enables data from numerous sources – aerial photos, scanned maps, digitised library footage, survey data – to be combined to provide dynamic pan and zoom manipulations of complex 3D models. Flight paths, tank manouevres and missile targetting are given greater accuracy. IMAP uses Informix's Structured Query Language-based relational database to handle both graphic and non-graphic data.

HUNKY HUSKIES

Perhaps the best known miltary computers are those produced by Husky. These rugged handhelds were first used in conjunction with the Rapier ground to air-missile system in 1981. Since then, the CP/M based 496K RAM Husky M-208 stands as the ultimate deck to take to war and is used as a fire control 'front-end' to program and aim missiles.

A new Husky, the Wolf, was launched at Milcomp '89. MS-DOS based, the 1Mb RAM Wolf weighs less than 1.5kg, sits in a sealed aluminium case and is powered by 4 AA batteries. Whether it can withstand being run over by a tank we have yet to verify. Husky is on 0203 668181.

NOTABLE QUOTES

"The military's only ahead in areas like aiming systems - if you want realtime graphics response go down to the arcades, that's where the fast sim stuff is happening"

"We're here to counter the threats posed by the dynamic realism of tomorrow's combat environment"

"I could have shown you World War III but the computer's gone down"

"Yes, it's as rugged as the man using it – probably more so – just look" (at this point the 386 laptop with 40Mb hard disk is thrown across the stand and stamped on)

"Let's face it, not only has the gear got to be harder than the guys using it, it's got to look after itself. In a war you're not going to care whether you've backed up a disk or not"

FLIGHT SIMS – YOU TOO CAN JOIN IN

• A relatively low-cost F-16A simulator is Mirrorsoft's *ACMT* PC-based combat sim. *ACMT* will come in two versions - Level 1 for the likes of you and me - Level 2 for Air Force rookies only. Mirrorsoft also plan to release a PC-based *Radar Air Intercept Trainer* in 1990.

• Acorn also made an appearance at Milcomp '89 with a bunch of Archimedes running the new *Interdictor* flight sim. Full review next issue.

• Fancy a sit-in cab that can be configured to run F-15, F-18, Tornado and Mirage jets employed against 'smart' targets, running software utilising classified avionics and weapons performance parameters? Where you can also view engagements from overhead, from your adversaries' cockpits or from a missile seeker head? That requires no special cooling or power conditioning and costs 1/500th of the cost of other pro-simulators? Give Perceptronics a call on 0101 818 884 3485 about its *ASAT* system.

OF WAR

QUOTABLE NOTES

• Intel's new supercomputer, the Touchstone, contains up to 2,000 i860 processors each as powerful as a Cray. Operating at over 128,000 Mflops, the Touchstone comes with 128 gigabytes of RAM and more than a terabyte of disc storage. It's main application? - the design of co-operating expert combat systems - also known as 'Smart Weapons'.

• Lockheed's new tactical weather satellite system - a reconnaisance system available for naval operations - is due to be 'shipped' to the U.S. Navy in 1990 for a cool $17 million. The system is based on four Motorola 68030 chips running code written in ADA - just a mere 1.5 million lines of it.

• Paravant's $7,000 RLT laptop can withstand a shock equivalent to be thrown into a brick wall at 70 mph. It can resist total immersion in water, temperatures between -32C and +63C, solar radiation, sand, dust and altitudes up to 15,000 feet. It's MS-DOS compatible, and uses eight meg memory cards.

• Harris Comms has developed a digital imaging system that can transmit full-colour video images by radio in less than 90 seconds - half the time of mono images. It's being installed in helicopters to transmit intelligence data to tactical operations centres.

• The three most commonly used military languages are trendy Ada, the distinctly aging FORTRAN and Lisp.

QUICK ON THE DRAW

Highlights of DuPont's Pixel System, showcased at Milcomp '89 and used in military modelling -

- Auto text input at 4000 characters a second
- Area copying at 14 million pixels a second
- Fills at 120 million pixels a second
- Line drawing at 120,000 10 pixel vectors a second
- 1024 colours on screen from a pallette of 16 million
- 1280x1024 resolution at 110MHz video rate
- Eight overlapping animated windows open simulataneously
- Disc storage of up to two gigabytes
- Realtime pans of a 2Gb image as it loads off disk
- 40Mb framestore accessed at 120 million pix per sec

ARMCHAIR ACTION!

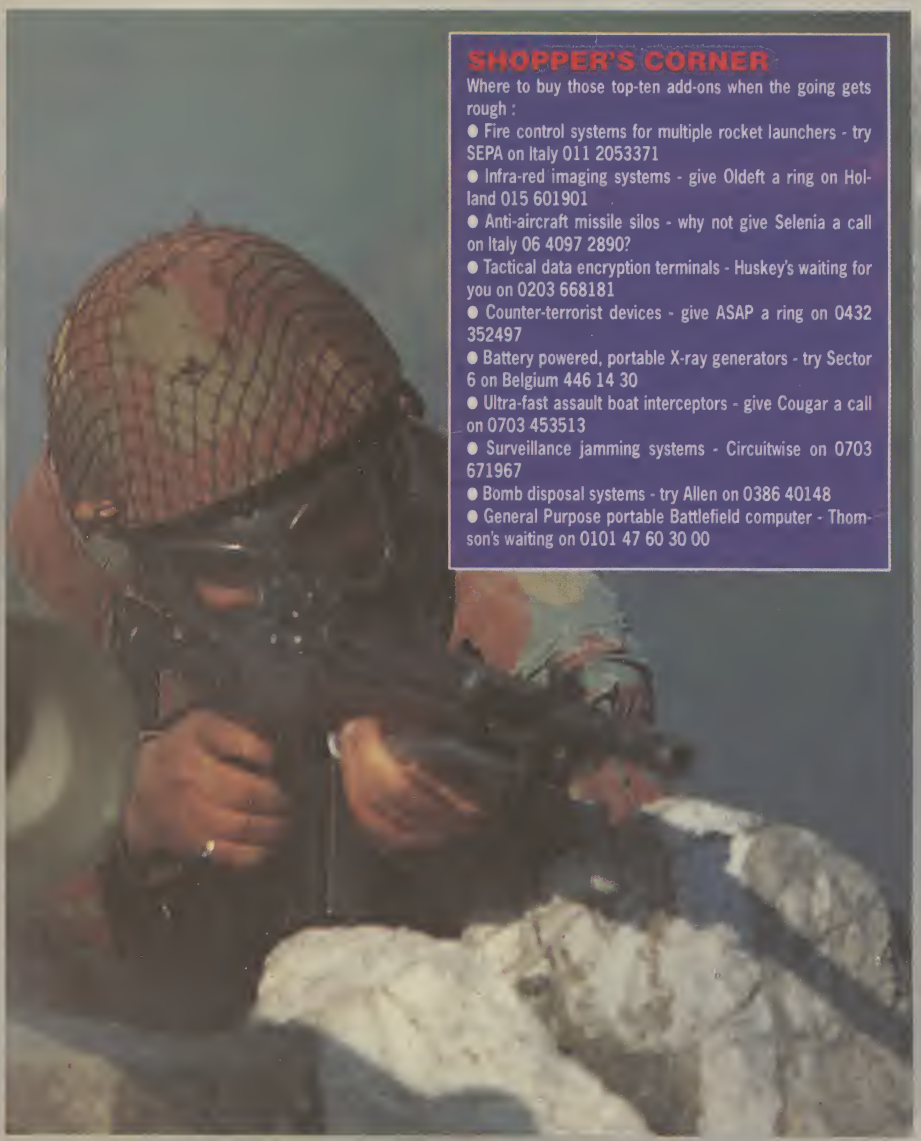
THE EXPRESS TOP 10 BATTLE-SCENARIO SIMULATORS

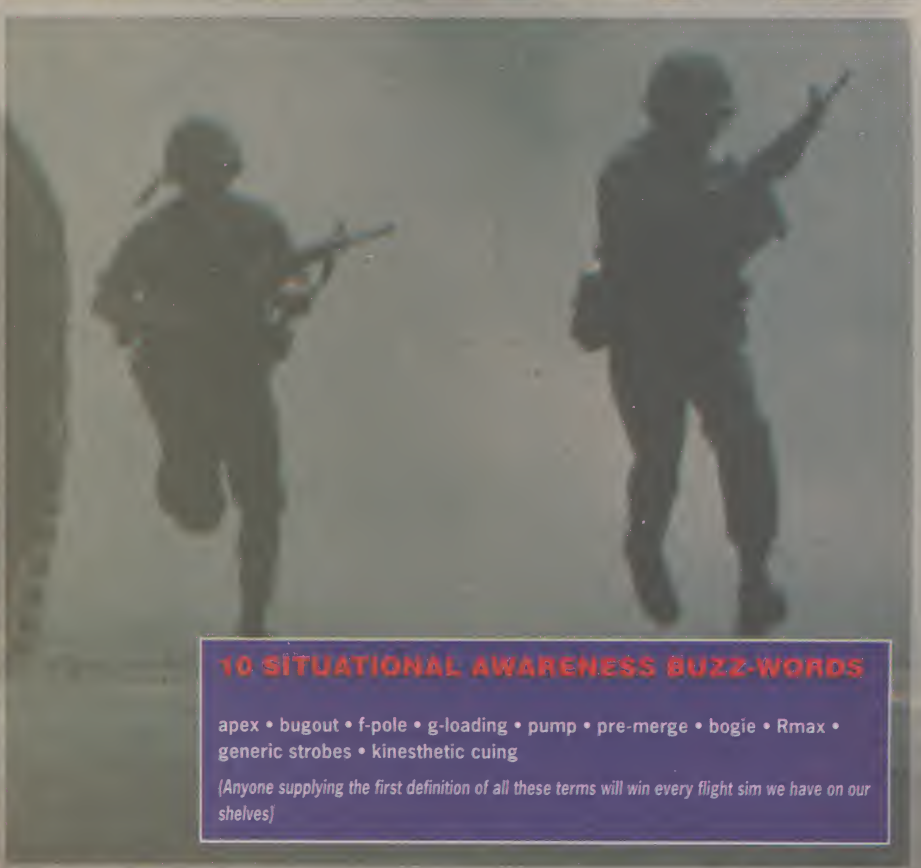
1	Interceptor	ElectronicArts	Amiga
2	Falcon	Mirrorsoft	ST/Amiga
3	F-16	Digital integration	ST/Amiga
4	Interdictor	Voltmace	Archimedes
5	688 Attack Sub	ElectronicArts	PC
6	Gunship	Microprose	All formats
7	BattleHawks 1942	Lucas Games	ST/PC
8	Abrams Battle Tank	ElectronicArts	PC
9	Silent Service	Microprose	All formats
10	Conqueror	Superior	Archimedes

SHOPPER'S CORNER

Where to buy those top-ten add-ons when the going gets rough :

- Fire control systems for multiple rocket launchers - try SEPA on Italy 011 2053371
- Infra-red imaging systems - give Oldeft a ring on Holland 015 601901
- Anti-aircraft missile silos - why not give Selenia a call on Italy 06 4097 2890?
- Tactical data encryption terminals - Huskey's waiting for you on 0203 668181
- Counter-terrorist devices - give ASAP a ring on 0432 352497
- Battery powered, portable X-ray generators - try Sector 6 on Belgium 446 14 30
- Ultra-fast assault boat interceptors - give Cougar a call on 0703 453513
- Surveillance jamming systems - Circuitwise on 0703 671967
- Bomb disposal systems - try Allen on 0386 40148
- General Purpose portable Battlefield computer - Thomson's waiting on 0101 47 60 30 00





10 SITUATIONAL AWARENESS BUZZ-WORDS

apex • bugout • f-pole • g-loading • pump • pre-merge • bogie • Rmax • generic strobes • kinesthetic cuing

(Anyone supplying the first definition of all these terms will win every flight sim we have on our shelves)

BEEB BOX

Exceptional

Acorn has just released its half-year results, and very interesting reading they make too. Not so much for their overall profit figure, but for a mysterious £1.2m listed under Exceptional Item. According to the press release accompanying the figures it is for "the granting of certain sales and marketing rights" to Olivetti. Without having access to the internal workings of either company, it is difficult so say exactly what this is for. An educated guess however would be that it is for the licencing of proprietary technology. That means the RISC chip. Perhaps Acorn will enlighten us in due course. Other points of interest; cash reserves of £5m, but operating profit down slightly due mainly to RAM chip prices, and the Master 128 continues to sell well.

Bonding

Licence To Kill from Domark is divided into sections and follows the plot of the film very closely. The graphics are monochrome but varied and well defined, with smooth vertical scrolling.

First you are flying a helicopter chasing Sanchez's jeep. Next, you are on foot carrying a gun with limited bullets. The third section has you controlling a helicopter with Bond dangling on a rope. Then you are in the water, and you must avoid the boats and bullets by either dodging them or going underwater. Finally Bond is driving a tanker full of petrol, The objective is to race along the road and catch up with Sanchez' tanker and destroy it.

Bond has four lives in each game. When the damage bar reaches its full length you loose a life. Overall the game is very playable with the sections getting progressively harder. The only gripe I have is that the bullets seem to follow you sometimes as the screen scrolls.

Mastering the 512

It's been a long time since I mentioned the Master 512 in this column, but that's mainly due to the fact that nothing very much has happened for that machine. Recently however there has been some stirring in the overgrowth as first Shibumi Software upgrade their DOS+ problem solver, and now Essential software weigh in with some utilities. *Problem Solver* is basically a memory resident patch which overcomes some of the incompatibility inherent in DOS+. Such things as keyword layout and screen mode problems are addressed. Perhaps it was the poor documentation, but I didn't find the software very easy to use. Essential Software's contribution is a set of three utilities relating to the RAM disk, The first, called *RAMdisk* sets up a disk in memory without the 100k overhead. *Amnesia* removes it and *DiscID* allows you to swap disk drive letters. Essential who are the brain child of Robin Burton (of *Hyperdriver* fame) have plenty more goodies coming out soon.

Andrew Brown

MSX TRA

Budget deals

A great deal of formerly full-priced software is now being re-released at budget prices for most popular makes of computer. Luckily this includes the MSX, and I find that at the moment, it is difficult to keep track of all the re-releases. Anyway, here are a few titles to look out for, and a few brief comments on each.

Firstly, on Ocean's Hit Squad label we have *Batman*, and *Hunchback*, both priced at £2.99. *Batman* is a 3D arcade adventure game, very much like *Head Over Heels*, and should not be confused with Ocean's latest game *Batman the Movie*, which I believe is going to be released on the MSX in due course. The original *Batman* is a very good game, with excellent graphics and novel problems to solve. *Hunchback* is one of the first games I played on my MSX, and impressed me then. Even now it is still one of the best versions of this arcade game, with good graphics, and game play almost identical to the arcade original. Both games are good value, *Batman* especially so, all arcade adventure freaks should own this game.

Who Dares Wins II has been re-released on the Alternative label, at the very low price of £1.99. This game at full price could, by no stretch of the imagination be classed as value for money, it was just not polished enough.. Now at its new price it can certainly be recommended,as a budget game it is good value. On the £2.99 Summit label we have *Army Moves*, and *Game Over*, these titles originating in Spain, programed by the software house Dinamic. At full price the games were only fair, with *Game Over* being slightly easier to play than *Army Moves*. At the new price they are very good value, and should please most hardened games players amongst you. Summit have also released a game called *Turbo Bike* for the MSX computer, also at £2.99, but as this is a title that is new to me, I assume that it is new to these shores, so until I can get a review copy,I cannot comment on its quality. The last title I can recommend at its new budget price is *Gauntlet* on the Kixx label, priced £2.99. It was a good full priced game, so can be classed as a giveaway at this reduced price.

The above is just a small selection of the re-releases, space just does not permit me to name them all. I will hopefully let you know if any gems are available at budget prices.

Import time

Another Japanese import has been gracing my MSX this week, this time it is the game *1942*. Now, I believe *1942* was originally an arcade game, and by all accounts was quite a hit. This I can't vouch for, as I don't visit such places (my wife won't let me). Therefore, I can't even say if this *1942* is even the same game as seen in the arcades, but as it is copyrighted to Capcom, it seems likely. This version of the game is produced by ASCII, and supplied on a 1Mb ROM. The game is basically a shoot-'em-up, you control a P38 Lightning aircraft and you have to destroy as many enemy aircraft as possible. There are 32 stages to complete, and POWs to collect, these giving extra features such as extra fire power or aircraft that fly alongside your plane ,like drones.

Sprites are used extensively in the game, and although the background does not scroll perfectly, you soon forget this when the action starts. All in all an enjoyable game, but as it is priced at £24.00 in Nightdares catalogue, value for money can only be classed as fair.

Keith Neal

SECTOR 64 SECTOR

Changing ways!

If you think back to the dark ages of 1984 you may just remember what type of games were lurking around on the 64. In '84 games were very simple but almost everything addictive. That was because many programmers could not do tricks on the machine to get things looking nice so they thought up clever ideas on making simple programs fun. All games were much harder than they are now. When your average coder sits down these days and writes a game the chances are that he doesn't know what the game's going to be like at the end because probably he hasn't even thought about it yet.

The early games, for example *Escape from MCP*, were simple maze games but you had to think about the best way to get round the maze without colliding with the enemy. You had to play the game for hours before you realised the correct route.

That game would not have a chance on today's market as games now need to have flash graphics and good story line to make the average game buyer take it off the shelf and buy it. Since screenshots have been put on cases people only buy games that look good.

All the Atari console games were very addictive but do you think that if they were released now with screenshots on the packaging they would sell? I doubt many people would buy them even though they're brill.

It would be nice to see a budget company out there doing a compilation of all Atari classics smashers on one tape with enhanced graphics, it would be the best budget compilation ever.

Show off

Two weeks ago was the PC Show at Earls Court, next week will we be bringing you our thoughts on the whole show so don't miss a single copy of *Express* because it's hot!

Technical

We have not been doing many listings lately so if there's a program you need written to help you then why not tell us what it is and maybe if it fits in the column we'll print the listing for you. So rush in your requests to the usual address, Sector 64.

Also anyone who would like to contribute there programs or anything else like cheats and tips send them in.

Ian and Mic

QL corner

Faster than Lightning

Digital Precision has announced that the latest version of *Lightning*, its accelerator program reviewed a few issues ago, is now available in the form of a ROM cartridge. Software in ROM runs considerably faster than RAM based software, loaded from Microdrive cartridge, because it doesn't have to share time with the video routines. DP claims a typical 30% improvement over the earlier version.

ROM Lightning special edition costs £49.95 and is available from Digital Precision Ltd, 222 The Avenue, London E4 9SE, 01 527 5493. Customers have a choice of ROM + disk or ROM + Microdrive cartridge. Existing users can upgrade.

DP has also announced a new, faster, PC emulator, rejoicing in the name of *The Conqueror*. More on this next week. *The Solution* is still available at the reduced price of £39.95.

More bugs

When a REPeat or FOR statement is encountered, the value of the corresponding variable is set to zero, e.g. x=3: FOR x=TO4

DIV doesn't check for all cases of binary overflow, giving spurious results. Try PRINT -32768 DIV -1.

This is probably better described as a feature rather than a true bug: you can't BREAK into a single line recursive procedure.

Do you get a buzz from your QL?

Many users get annoyed by constant buzzing noise from their power supplies. I recall a QUANTA member curing this problem by hitting his power supply with a hammer! It might be worth trying this if you are thinking of buying a replacement. It's much cheaper and probably better for your blood pressure.

Archival material

I recently suggested the use of the Archive programming language if grater arithmetic precision than that provided by SuperBASIC was required. John Mason has pointed out that although I stated that Archive has no array facilities, an Archive database can be regarded as a single dimensional array consisting of, say, 30 cells (fields) by up to 65530 cells (records).

If you have tried writing your own screen-handling routines in the Archive language, you might be interested to know that printing CHR (27) + "A" clears a line from the cursor, and printing CHR(27) + "B" clears the screen from the cursor. This information doesn't appear in the Archive documentation, although it is included, apparently, with the documentation provided with Run Time Archive (mainly used by software developers) . I have a feeling that the above tip will only work with version 2.3 which is probably why it isn't mentioned in the manual.

John Torofex

PCW PATCH

Big of them

One feature I've overlooked in the latest version of *LocoScript* (2.28) is the one that can display your document twice as big – the 'large edit characters' option from [f8]. Great for those of us whose arms are getting too short to read the paper. If only *Express* had the same option...

PC LocoScript

Having had my hands on PC *LocoScript* I can tell you the good and bad news. The good news is that it looks almost identical to *LocoScript* on the PCW – no problems for the upgrader – except that it's considerably faster. No more jokes about *Loco* doing impersonations of the Pre-Cambrian period, or of it taking longer to move blocks around than the builders currently on my new house (come on boys, you said end of August at the latest...).

All the same menus and keypresses are there. The only problems are finding keys like [EXCH] and [EOL] on a Compaq keyboard, as they don't actually exist, and have been substituted by [CONTROL] key combinations and so on.

The same printer support is there with probably any daisywheel or dot-matrix printer in the world being usable immediately – £ on the keyboard equalling £ on printout. You can use it with some laser printers, but only in 24-pin emulation mode.

There's *LocoFile*, *LocoSpell* and *LocoMail*, all exactly the same as on the PCW. The whole thing will be £125 – not at all bad for the PC market.

The bad news? You'll have to wait until February 1st. But Locomotive will be making improvements between now and then.

Officially confirmed

It is a fact of life that sons (or daughters) do not always live up to the expectations of their fathers (or mothers). There are countless examples of success stories with rather less successful offspring, for example Margaret Thatcher (some might say Alderman Roberts). And *Mini Office*. The sequel to this excellent program, *Mini Office Professional Plus*, was panned by the computer press, with few nuggets of gold to be found.

Now, however, Database is doing its best to put things right with a new version of *MOPP*. Chris Payne, Database's marketing man, admits the fiasco has been 'the biggest disaster in the history of company' and says a new version has gone out for testing, featuring spell checking and thesaurus call-up from within the document, and faster operation. Existing *MOPP* users can get a free upgrade.

As Neville Chamberlain said, 'Here is the paper, and bags I have the sports pages first'.

PIP tip

Ever had that problem of wanting to copy all but 3 of the 16 files on a disk? PIP has an easy way out. Just type PIP M:=A:*.*[c][RETURN] and PIP will flag each file as it copies and ask you to confirm with Y or N whether to copy it or not. So press Y for all the ones to be copied, N for the others, and there you go.

Basil Pigg

ARCHIMEDES LORE

New games

It was encouraging to see a lot of new software for the Archie at the PC Show. On the leisure side were two good-looking games. The first is heavily based on the excellent old arcade game *Battle Zone*. This is the vector graphics tank battle with tanks, super tanks, and saucers to shoot at and pyramids and cubes to avoid and use as shelter.

The other newy is more like the *Outrun* and *Le Mans* games where you take a behind-the-bumper look at a fast car doing its best to break every speed limit between here and 'Frisco. The new Archie version, *E Type* has the legendary Jag in the star role and interesting cars like Minis taking the place of the rather nondescript US limos of the original. Landscape scrolling was good but I didn't get a chance to suss the gameplay. More details on these two as I get them.

Impression 3

My beta test copy of *Impression* arrived the other day, and it certainly looks jolly good – the bits that are in place, anyway. Computer Concepts swears the remaining bits will available in about three weeks. Judging from the version I've seen, it would be better to expect it around Christmas. The whole thing's very smartly presented with a well produced manual - no screen shots yet - and four disks. It also includes the latest set of Acorn fonts and drivers, which of course you can use with any RISCOS product.

Impressive rivals

DTPs are squeezing out of the woodwork on all sides at the moment. Rivals for *Impression* which will be available by the time it reaches the public are *Tempest* from Clares (sorry about the misnomer in the last column, Dave) and *BEEBUG Desktop Publisher*. The BEEBUG product includes style sheets, multi-column text, scaling and cropping of pictures and multiple documents. There's also support for more word processory things like headers and footers, cut and paste, search and replace and spell checking. It may well be first on the market after the Acorn offering, which is already with us. BEEBUG DTP at £151.35 can't be ignored in the DTP stakes.

Bertrum Carrot

Repton 3 tip

This is a possible tip from one Thomas Williams, aged six and four months. At this stage it's only a possible, as it's difficult to duplicate. It seems, however, that if you can switch back to the menu screen when you've run down to exactly 0 time units, you don't lose a life. Can anyone confirm this, or is all Tom's hard work in vain? Please let me know, as with anything else of interest you come across. P.S. Tom's half way through purple level at the moment.

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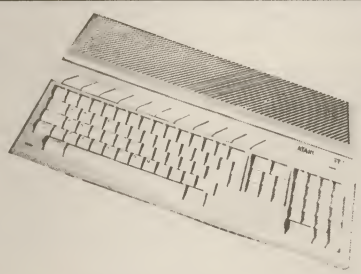

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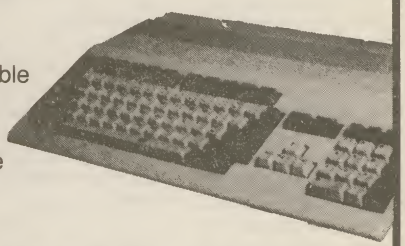

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TECH TIPS

Personal computer problems? Express' Agony column has the answer. Write in strictest confidence to Uncle Techtip. The best tips win a freebie – so tell us your address and machine

TIP PCW a printer?

It's generally thought not to be possible to connect the PCW printer to another computer. This is true, because the PCW printer has been lobotomised by Amstrad, and the printer controller chip is housed inside the Amstrad monitor. However this does not mean that all the necessary components are there to drive the printer, but that this has to be done through the PCW.

Provided you have the necessary hardware (a serial interface for the PCW and the appropriate connecting cable) it is possible to make the PCW think it is a printer (bit demeaning for the PCW though!). You will need the following CP/M utilities: SETSIO, PIP, PAPER and BASIC to set the printer type styles.

First connect the computer you want to print from to the PCW via the serial interfaces on both machines. Then boot the PCW with CP/M. Run SETSIO to set the serial port to the speed that the sending computer expects for its printer, you can also just type SETSIO to find out what the current default settings are (see page 94 of the PCW manual for details of the options available using SETSIO). Next use PAPER to set parameters like length, continuous stationary and the gap length for the printer, again you can type PAPER to find out what the default settings are (See page 90 of the PCW manual for details as to the options for PAPER). Run the following BASIC program

```
10 LPRINT CHR$
(27);"m";CHR$(1)
20 SYSTEM
```

This sets the printer to high quality printing (if you save this program under the name `PRINTER.BAS` you can run the program by typing BASIC PRINTER). You can set any of the printers range of typeface options (high quality, italic, underlined etc.) from BASIC using the command LPRINT and CHR$ to send the escape code (ASCII character 27) plus other characters. See page 130 of the PCW manual for further details of the printer control codes. Finally `PIP LST:=AUX:`. This directs signals arriving at the serial out to the printer. The PCW now effectively thinks of itself as a printer. Finally select PRINT or whatever the command is on the source computer, and watch your file print out on the PCW printer. When the printout has finished you may find that the PCW hangs. It is waiting for a signal from the source computer to say that the end of the file has been reached. If this is not sent the only way to regain control of the PCW is to reboot it with CP/M.

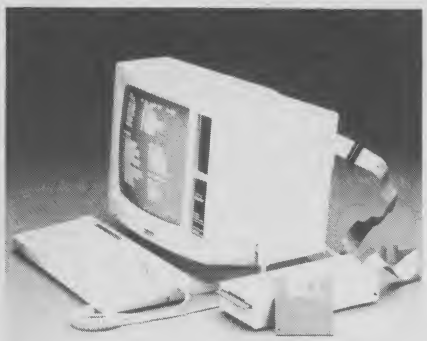
Here is an example which sets the PCW up as a printer at 1200 baud using continuous paper and high quality text:-

```
SETSIO 1200
PAPER continuous
stationery
BASIC printer
PIP LST:=AUX:
```

This set of commands could be typed into a file under Locoscript and saved as an ASCII file with the name `PRINT.SUB`. You will need all the files mentioned above and `SUBMIT.COM` on your disk. Then all you need to do when you want to use the PCW as a printer is to type SUBMIT PRINT.

I have used this setup with a Macintosh computer to print text files.

J. M. Crellin, Bletchley, Milton Keynes.



• Help with LocoFile on your PCW.

HELP! ST trio

I am writing to inform the readers about Evesham Micros and also to ask some Atari ST related questions. On the 11th of September I placed an order for a Philips CM8833 monitor with ST cable, this arrived on Wednesday of the same week but unfortunately the cable would not fit the monitor. I telephoned Evesham micros who sent out a cable which I received the very next day! This is excellent service and shows that some companies do care.

Now for some questions.

1. Can I use a thesaurus with *1st Word Plus* on the Atari ST? If so, would this mean returing to the Desktop? If it is possible, please can you recommend one?

2. I have recently had trouble with my backup copies of the *ST Format* Superdisk. After using he backup a few times when I access the disk all I get is vertical lines on the screen. If I try to reformat the disk and recopy the files from the original I am unable to do so. The original disk works fine. Are my disks faulty or corrupt?

3. My last question is I have *Super Hangon* but I am unable to get a full picture. There is a black border around the outside of the screen. The problem is the same with both a monitor and a TV. I have tried to adjust the vertical and horizontal controls but the width is not improved and the contrast distorts the picture. I do not wish to take the back off the monitor because this invalidate the guarantee. While I can still play the game it is annoying.

J. Lord (Miss), Selby, North Yorkshire.

1. Yes, Kuma the software house responsible for a large range of productivity software for the ST computers under the 'K' banner, market *K-Roget*. The program behaves as a normal desk accessory which means that you do not have to quit *1st Word* or any other application in order to use it, but simply select it from the desk accessories list, then click with the mouse on the window close box when you've finished. *K-Roget* costs £29.95 (as a special offer until Christmas, the normal price is £49.95) and can obtained from Kuma on 0734 844335.

2. There is no reason why you can't make as many copies of the files on the *ST Format* Superdisk as you like. Do bear in mind that the Superdisk is format with 10 sectors per track in order to cram more on to the disk. This means that if you try to do a straight copy between the Superdisk and an ordinary disk it won't work. The Superdisk does however, come with a program known as *Format10* which will format a disk to the correct size and allow you to make trouble free transfers of the programs. Failing all that, I would suggest you try a new, unused disk, perhaps the one you're using is corrupt.

3. Our resident games expert Maff Evans tells me that the ST version of the game *Super Hangon* doesn't present a full screen unlike the Commodore Amiga version. A black band around the edge of the screen is therefore to be expected. Don't worry about it, enjoy the game....

TIP Thump your PCW

The disk drive on my Amstrad PCW8256 recently gave up the ghost giving me the unwelcome prospect of a £100 repair bill. As a last ditch attempt at a DIY solution I gave the case just above the disk drive a sharp thump. Much to my surprise *(there was aloud bang and the machine died? - Uncle Techtip)* the drive now works perfectly again. Brave PCW owners might like to try this before shelling out.

Paul Kennedy, Ware, Herts.

Giving your machine a whack, huh? I'd think very carefully about putting this suggestion into practice - even if your machine is a PCW. Uncle Techtip cannot be held responsible etc etc.

TIP BREAKing out

Firstly, you attempted to publish my tip to disable BREAK on a Beeb in *Express* 45, page 36. However, due to the size of the boxes on the form and probably my handwriting, you got it wrong (sound of klaxons in the background - Uncle TT). It should read !&287=&0002874C. The & is the sign of hex and ! pokes four bytes into the memory).

Secondly, I notice in 'Bug of the Week' in *Express* 43, Rafael Jay points out the interesting effects that can be obtained in Quest. The problem is not peculiar to this program, but appears wherever the BASIC INPUT command is used. For this reason I rely almost totally on my own input routines.

Jeremy Benson, Bedford.

HELP! Spinning disk

Could you please help me with a problem I have with *Falcon Mission* disk 1 on my Atari 520STFM. Can you tell me if taking the disk out of the drive while the drive's busy light is on and the disk motor is still spinning, will do any damage to the disk drive, disk drive head or the disk itself. The reason I ask this is that I bought *Falcon Mission* disk 1, loaded it but when it cam to changing the disk for disk 2 as prompted on screen the disk drive just keeps working and does not stop to allow you to change the disks. I wrote to

Mirrorsoft and they told me to select the quit option to stop the drive - there isn't a quit option! The second time I contacted them I was told to take the disk out of the drive while it was still running.

As I have had this program for over a month now and have not been able to use it, please shed some light on this problem.
J. E. Rollitt, Brinsworth.

Although the general belief is not to take a spinning disk out of a drive until the busy light is extinguished, with this type of ST game the disk can be removed even though there still appears to be disk activity because the program has stopped all accesses and prompted you to change disks. Go ahead. Enjoy the programs and don't worry about the disks or your drive.

TIP PIPped at the post

I started wondering whether DISCKIT and PIP were really the most cost-effective means of creating backups of vital Amstrad PCW data. Surely, squeezing the data would allow multiple backups to be made on the same number of backup disks. I have experimented with NSWEEP, backing up to and from disks which had directories expanded by INITDIR, to allow dated backups of files and archive flagging. This procedure is illustrated below for B disks with a number of submit files which perform most of the hard work. First issue the following commands to initialise the directory and allow date-stamping of files on every disk

```
initdir b:
s e t b:[create=on,update=on]
```

BKUPDONE.SUB sets the archive completed flag on all files in the particular user area on the original B disk. The first may be removed if SET.COM is already a system file.

```
set set.com[sys]
user $1
set b:*.*[archive=on]
user 0
```

Submitting these files in this order will give you backups, in squeezed format and date-stamped on your backup disk and the original files, when listed by NSWEEP, will have the last character of the filetype in reverse mode indicating that a backup of that file exists. For example, to squeeze files in user area 0 onto backup disk user area 2, use the following commands

```
submit bkupsqz 0
submit bkupcopy 2
submit bkupdone 0
```

All I need now is for someone (to make sense of all this? - Uncle TT) to come up with a simple method of pausing between submit files automatically, so I can exchange disks and not have to type in another command afterwards.
P. R. Holland, Royston, Herts

HELP! Going loco

I have owned an Amstrad 9512 PCW for nearly two years and despite being non-computerate I have managed to achieve all that I have wished to do on it with *LocoScript* 2.21 *(hurrah! - Uncle Techtip)* in connection with correspondence, minutes of meetings a famil tree and sundry other writing interests. I have not had occasion to use Locomail beyond the exploratory stage but found no particular difficulty there. I do use the fill mode for some standard letters.

I bought *LocoFile* as soon as it became available and have a number of quite extensive data files, particularly of ancestors in connection with my family history interests.

I now wish to produce a document (not necessarily on paper) showing a list of all the information in one of the files in alphabetical order of surname and have been singularly unsuccessful unless each item is printed on a separate page. I have managed to repeat the same item over and over again but I can't get it to move on to the next item automatically. I have been reduced meanwhile to copying and pasting the needed items individually and this is both tedious and frustrating.

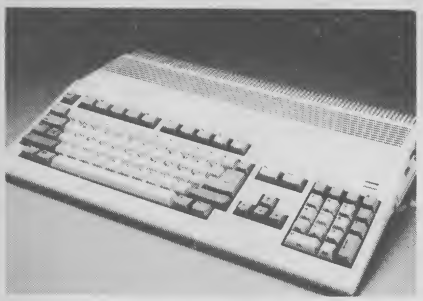
I am sure that the file is correctly set up. Similarly, I am sure that the equipment and software are working properly. I conclude that I am missing some vital point and would be greatful if you could point me in the right direction. The file in question has three fields: Surname; Forname and Connection. The first two are one or two word items and my experiments have been confined to these two alone. The third comprises one or two sentences and occupies a space of 50 spaces on each of four rows although I have not yet had to use more than half of this space for any record.
John Heritage, Crowthorne, Berks.

What you need to do is to write a loop in *LocoMail* which will turn the *LocoFile* list of records into a standard *LocoScript* document. At this point you will have a list of names etc., separated by 'end-of-page' breaks ([ALT]-[Return]). Use the exchange facility to exchange each occurence of the [ALT]-[Return] combination with a couple of returns. This should solve the problem.

TIP Fly by megabyte

In Tech Tips *Express* 48, I had a letter from Martin Warmington who was trying desperately to connect two Commodore Amigas together with a null modem cable in order to fly *F16 Falcon*. The cable worked perfectly with other games supporting two player mode, so what was wrong? Well this afternoon, I had a call from a guy with a really fabby Geordie accent living in Billingham, Cleveland who solved the problem.

'Why man, ya need ta hev wan megabyte uv RAM' which roughly translated means that one machine needs at least 1 megabyte of RAM in order to run the game successfully in two player mode. Simple, huh? My thanks to John Davis...



• Problems with two-player F16 Falcon on your Amiga A500? Find out why...

TIP Virus warning

This week whilst using my Atari ST, I found to my dismay that I could not do a warm boot by using the reset button on the back of the machine, forcing me to turn the computer off and on.

I found this happened after I used my main boot disk. I wasn't sure if this was a hardware or software problem. I dug out my *VDU* disk V3.6 and booted it up. The program gave a virus warning and identified it as the ghost virus number 12.

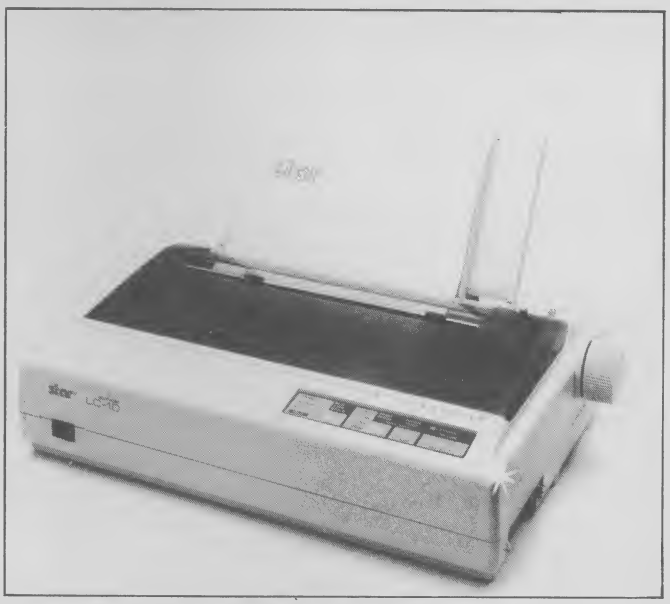
I thought the ghost virus just reversed the up and down movements of the mouse pointer, so this must be a new virus or a new aspect of the ghost virus. Eventually, I was unable to boot from cold with the infected disk. The ST crashed with four bombs. I killed the virus with *VDU* and afterwards I could boot from the infected disk so the boot disk was immunised before it became infected.
Clive Parker, Pill, Bristol.

• ST owners watch out : there's a virus about.

HELP! Line by line

I have recently bought a Star LC-10 colour printer and every time I do a printout of graphics or a large block of colour I get these horrible lines, is this something to expect? Do I have a faulty printer? How do I get rid of these lines or would I have to buy a £500 printer.
E. Burnham, Hatfield, Herts.

When Epson and compatible printers reproduce graphics displays, they perform actions such as reverse line feeds and half line feeds peculiar to the Epson marque. Unfortunately, with a dark or black background it's possible to see the 'join' between these lines feeds. Rest assured that there's nothing wrong with your LC-10, it's just that the low-end nine-pin machines do not produce breath-takingly good graphic printouts. With printouts of DTP packages etc consisting mainly of text you will find that the lines are not (if it all) as noticeable.



• Lineson Star LC10 printout : are they curable?

COMPUTER CHAOS

More computing cock-ups from the archives of Mel Croucher...

MINISTRY OF DEFENCE, MALVERN

The Royal Signals and Research Establishment upgrade their IBM computers, and the old hardware is auctioned off at Hereford in 1987. Months later, a 24-year-old student visits the WS Surplus Supplies, Oxford, looking for a pair of socks. He buys a computer instead costing £45, and is surprised to find hundreds of classified files resident on the hard disk. These include the design of monitoring equipment, self destruct codes and future research budgets. After a 'thorough investigation', the MOD tighten up their security, but do not publish two intriguing facts. Firstly, the wandering hard disk contains a range of computer games, obviously played by bored research officers while on duty. Secondly, only one of the trashed machines has turned up so far, and the new owners of the other hard disk secrets have decided not to make themselves known.
(Sunday Times)

SAGINAW, MICHIGAN

Terry Dean Rogan is arrested five times in Texas and Michigan during 1988, for robbery and murder. His main accuser is the City of Los Angeles police computer. The trouble is, he is totally innocent. 30 year old Mr Rogan eventually receives $55,000 compensation when the real murderer is discovered in an Alabama jail posing as none other than Terry Dean Rogan. It seems he has requested a duplicate birth certificate on the same day as poor Terry, and another computer cocked up, offering him an instant new identity.
(New York Times)

PHOBOS, near MARS

Soviet ground control beams up a 27 page message to their Phobos-1 Mars probe. It is received and the computers instructions immediately obeyed. Unfortunately a single character has been omitted in the form of a hyphen, causing the space craft to point its solar panels away from the sun. Naturally, the batteries soon run down and all communication is lost, thereby turning several billion roubles of satellite into scrap metal and creating the costliest typing error in history.
(San Francisco Chronicle)

SYDNEY, AUSTRALIA

A massive computer failure allows Westpac Bank cash dispensers to pay out unlimited sums of money with or without the insertion of a card. In central Sydney, several tramps set up orderly queues allowing a maximum withdrawal of 500 dollars per bum. By the time the dispensers are cleaned out and the error spotted, the bank is down by millions, but not from the cash withdrawals. It is clear that international finance dealers are not averse to helping themselves electronically.
(Sydney Morning Herald)

TYNESIDE

A 23-year-old male bank clerk gets the hots for a 32-year-old sophisticated lady. He buys her a £4000 fur coat, a sunbed and sets her up in a hairdressing business. While enjoying her favours on a two week binge in St. Tropez, he manages to lose £10,000 in the casino. It is during this vacation that a junior clerk notices discrepancies in 17 bank accounts, totalling two thousand times the errant employee's salary. When he is arrested he confesses at once, pleading that the computer system was so easy to cheat it was an 'unfair temptation'. He gets a minimal nine months jail. His lady friend immediately disappears.
(Daily Telegraph)

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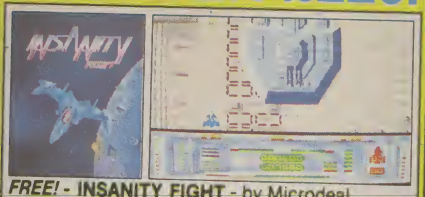

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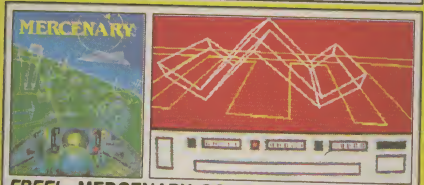

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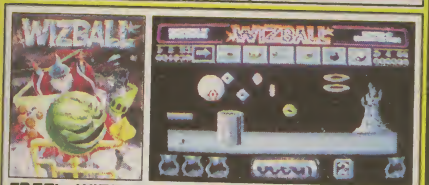

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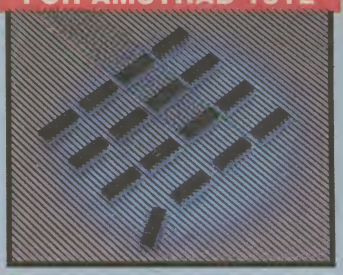

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